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[Whole Number 220

U. S. BUREAU OF EDUCATION.

REPRINT OF CHAPTER IX OF THE REPORT OF THE COMMISSIONER OF EDUCATION FOR 1892–93.

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EDUCATION IN ALASKA

1892-93.

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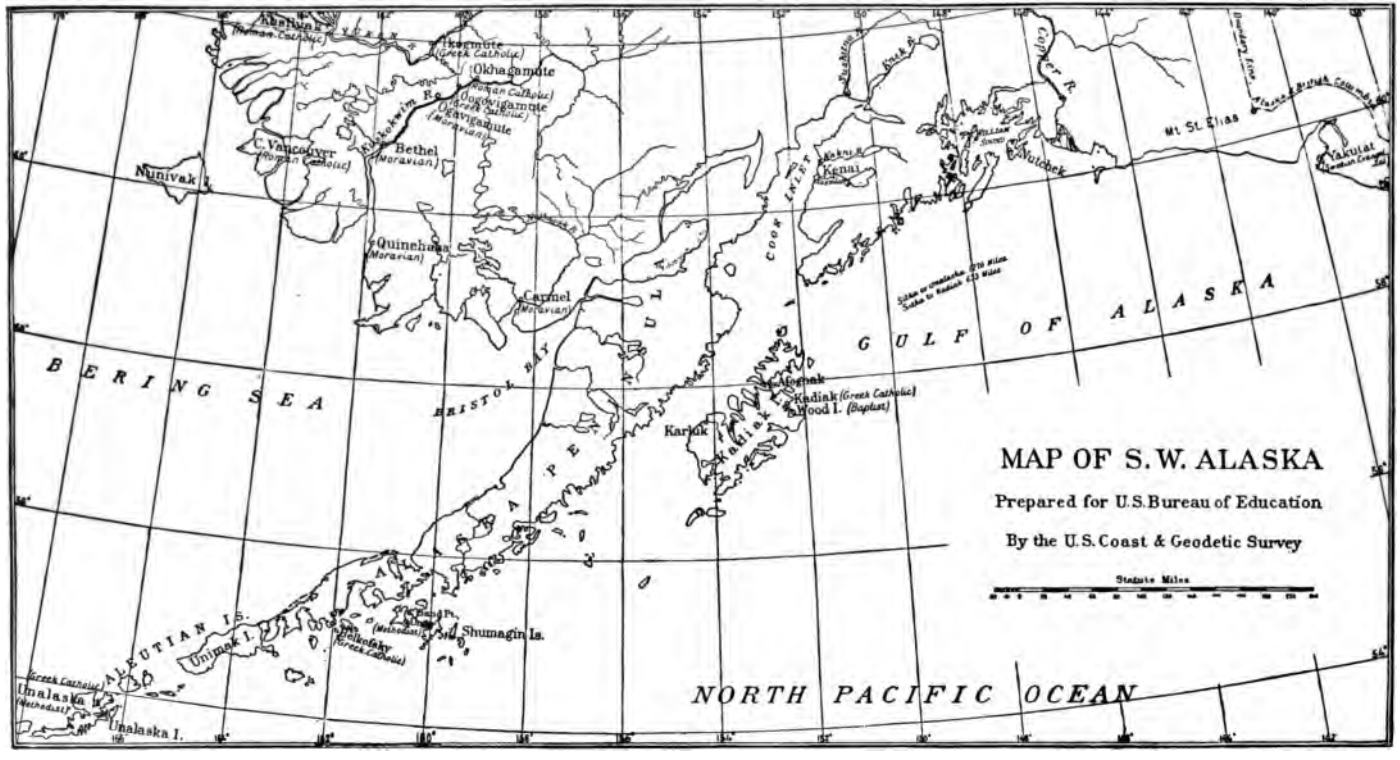
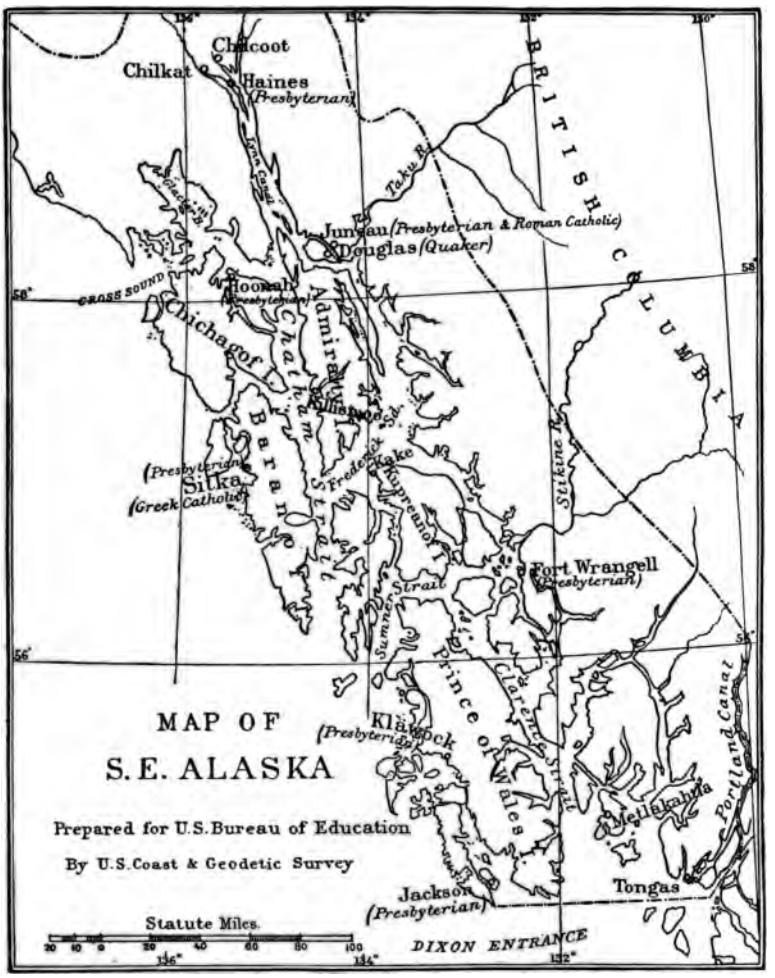
GENERAL AGENT.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1895.


MAP OF S.W. ALASKA
Prepared for U.S. Bureau of Education
By the U.S. Coast & Geodetic Survey
Statute Miles
BERING SEA
GULF OF ALASKA
NORTH PACIFIC OCEAN
BRISTOL BAY
COOK INLET
ALEUTIAN IS.
Nunivak
Bethel (Moravian)
Quinehagak (Moravian)
Carmel (Moravian)
Kenai
Kodiak (Greek Catholic)
Afognak
Karluk
Unimak I.
Shumagin Is.
Unalaska
Unalaska I.
Yakutat
Mt. St. Elias

MAP OF N.W. ALASKA
Prepared for U.S. Bureau of Education
By the U.S. Coast & Geodetic Survey
Statute Miles
Wrangell I.
Pt. Barrow (Presbyterian)
Pt. Belcher
Icy Cape
ARCTIC OCEAN
Herds of Domesticated Reindeer
C. North
Pt. Hope (Episcopal)
Noatak R.
NORTHEAST SIBERIA
Land of the Tchuktchers
C. Serdze
Utata
Inchaurin
Whalen
East Cape
Herds of Domesticated Reindeer
Village
Cross B
St. Lawrence Island
Plover B
C. Krusenstern
Port Clarence
Reindeer Station
King I.
Indian Pt.
ANADIR GULF
Boundary Line between Alaska and Siberia
St. Lawrence
C. Navarin
BERING SEA
KOTZEBUE SOUND
Kotzebue (Episcopal)
Kowak R.
Pt. Spencer
Pt. Phoenix Is.
C. Prince of Wales (Congregational)
Nunivak
Golofnin B.
Nulato (Roman Catholic)
St. James Mission (Episcopal)
NORTON SOUND
St. Michael I. (Greek Catholic)
Unalakliq (Swedish Episcopal)
Mouths of Yukon River
Anvik (Episcopal)
Kosoriffsky (Roman Catholic)
Kuskokwim R.


Chilkoot
Chilkat
Haines
(Presbyterian)
Lynn Canal
Taku R.
BRITISH COLUMBIA
Juneau (Presbyterian & Roman Catholic)
Douglas (Quaker)
Glacier Bay
Hoonah
(Presbyterian)
CROSS SOUND
Chichagof
Admiralty I.
Chatham Strait
Baranof I.
Sitka
(Presbyterian)
(Greek Catholic)
Kupreanof I.
Stikine R.
Fort Wrangell
(Presbyterian)
Sumner Strait
Prince of Wales I.
Clarence Strait
Ketchikan
Portland Canal
MAP OF
S.E. ALASKA
Prepared for U.S. Bureau of Education
By U.S. Coast & Geodetic Survey
Klawock
(Presbyterian)
Jackson
(Presbyterian)
Tongas
Statute Miles.
20 40 0 20 40 60 80 100
136°
134°
132°
DIXON ENTRANCE
56°
58°

CHAPTER IX.

REPORT ON EDUCATIONAL AFFAIRS IN ALASKA.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION, ALASKA DIVISION,
Washington, D. C., June 30, 1893.

SIR: I have the honor to submit the following annual report of the general agent of education for Alaska for the year ending June 30, 1893:

In the summer of 1890, in accordance with your instructions, I visited northern Alaska and established schools for the Arctic Eskimo at Cape Prince of Wales, Point Hope, and Point Barrow. Through the courtesy of the Secretary of the Treasury and of Capt. L. G. Shepard, chief of the Revenue Marine Division of the Treasury Department, I was permitted to accompany the U. S. revenue marine steamer *Bear*, Capt. M. A. Healy, commanding, on her annual cruise in Bering Sea and the Arctic Ocean.

In addition to conveying me to the points designated, Captain Healy was under instructions from the Secretary of the Treasury to visit the coast of Siberia and distribute presents to the Koraks around Cape Navarin in return for shelter and food furnished shipwrecked American whalers. He was also under commission from Superintendent Porter, of the Census Office, to take a census of the native population along the Arctic coast of Alaska and the islands of Bering Sea, which population could not be reached by the usual enumerators.

The trip to Siberia enabled me to make a cruise of 700 miles along that little-known coast, and study somewhat the character of the native population under conditions corresponding with those under which life must be maintained in Alaska. I found them to be a hardy, active, and well-fed people, owning tens of thousands of head of domestic reindeer.

The taking of the census of Arctic Alaska furnished me even more extensive facilities for studying the condition of the Eskimo of Alaska. I found them, like their neighbors on the Siberian side, to be a hardy and active people, but because they had never been instructed to depend upon the raising of reindeer as a support, unlike the Siberians, they were on the verge of starvation. The whale and walrus that formerly had constituted the principal portion of their food have been destroyed or driven off by the whalers, and the wild reindeer that once abounded in their country have been killed off by the introduction of breech-loading firearms.

The thorough canvass of the native population for enumeration, necessitating a landing wherever even one or two tents were seen on the beach, furnished unusual opportunities for observing the educational needs of that people and learning the great difficulties under which schools will have to be carried on.

Upon my return to Washington I had the honor on November 12 to address you a preliminary report of the season's work, emphasizing the destitute condition of the Alaskan Eskimo.

On the 5th of December this report was transmitted by you to the Secretary of the Interior for his information and on the 15th transmitted to the Senate by Hon. George Chandler, Acting Secretary of the Interior. On the following day it was referred by the Senate to the Committee on Education and Labor.

On the 19th of December, Hon. Louis E. McComas, of Maryland, introduced into the House of Representatives a joint resolution (H. R. No. 258) providing that the act of Congress approved March 2, 1887, "An act to establish agricultural experiment stations in connection with the colleges established in the several States under the provisions of an act approved July 2, 1862, and of the acts supplementary thereto" and an act approved August 30, 1890, entitled "An act to apply a portion of the proceeds of the public lands to the more complete endowment and support of the colleges for the benefit of agriculture and the mechanic arts, established under the provisions of an act of Congress approved July 2, 1862," should be extended by the Secretary of the Interior over Alaska, with the expectation that the purchase, improvement, and management of domestic reindeer should be made a part of the industrial education of the proposed college.

The resolution was referred to the Committee on Education, and on the 9th of January, 1891, reported back to the House of Representatives for passage. (See Appendix A.)

It was, however, so near the close of the short term of Congress that the resolution was not reached.

When it became apparent that it would not be reached in the usual way, the Hon. Henry M. Teller, on the 26th of February, moved an amendment to the bill (H. R. No. 13462) making appropriations for sundry civil expenses of the Government for the year ending June 30, 1892, appropriating $15,000 for the introduction of domestic reindeer into Alaska, which was carried. The appropriation failed to receive the concurrence of the conference committee of the House of Representatives.

Upon the failure of the Fifty-first Congress to take action, and deprecating the delay of twelve months before another attempt could be made, with your approval, I made an appeal in the Mail and Express of New York City, the Boston Transcript, the Philadelphia Ledger, the Chicago Inter Ocean, and the Washington Star, as well as in a number of the leading religious newspapers of the country, for contributions to this object. The response was prompt and generous; $2,146 were received. (Appendix B.)

As the season had arrived for the usual visit of inspection and supervision of the schools in Alaska, you were kind enough to direct that in addition to my regular work for the schools I should continue in charge of the work of transplanting domesticated reindeer from Siberia to Alaska. As the natives of Siberia, who own the reindeer, know nothing of the use of money, an assortment of goods for the purpose of barter for the reindeer was procured from the funds so generously contributed by benevolent people in answer to the appeal through the newspapers.

The Honorable Secretary of the Treasury issued instructions to Captain Healy to furnish me every possible facility for the purchase and transportation of reindeer from Siberia to Alaska. The Honorable Secretary of State secured from the Russian Government instructions to their officers on the Siberian coast also to render what assistance they could, and on May 25, 1892, I again took passage on the revenue-cutter *Bear*, Captain Healy in command, for the coast of Siberia.

The proposition to introduce domesticated reindeer into Alaska had excited widespread and general interest. In the public discussions which arose with regard to the scheme a sentiment was found in some circles that it was impracticable; that on account of the superstitions of the natives they would be unwilling to sell their stock alive; further, that the nature of the reindeer was such that he would not bear ship transportation, and also that even if they could be purchased and safely transported the native dogs on the Alaskan coast would destroy or the natives kill them for food. This feeling, which was held by many intelligent white men (Appendix C), was asserted so strongly and positively that it was thought best the first season to make haste slowly, and instead of purchasing a large number of reindeer to possibly die on shipboard, or perhaps to be destroyed by the Alaskan dogs (thus at the very outset prejudicing the scheme), it was deemed wiser and safer to buy only a few.

Therefore, in the time available from other educational duties during the season of 1891, it seemed important that I should again carefully review the ground and secure all possible additional information with regard to the reindeer, and, while delaying the actual establishment of a herd until another season, that I should determine the correctness of the objections that the natives would not sell and the deer would not bear transportation by actually purchasing and transporting them.

The work was so new and untried that many things could only be found out by actual experience.

First. The wild deermen of Siberia are a very superstitious people, and need to be approached with great wisdom and tact.

Upon one occasion, when Captain Healy purchased a few reindeer for food, the following ceremonies were observed: When getting ready to lasso the deer the owner's family seated themselves in a circle on the ground, where probably some rites connected with their superstitions were observed. Upon attempting to approach the circle, I was motioned away. After a short time the men went out and lassoed a selected animal, which was led to one side of the herd. The man that was leading him stationed himself directly in front of the animal and held him firmly by the two horns. Another with a butcher knife stood at the side of the deer. An old man, probably the owner, went off to the eastward, and placing his back to the setting sun seemed engaged in prayer, upon the conclusion of which he turned around and faced the deer. This was the signal for knifing the animal. With apparently no effort, the knife was pushed to the heart and withdrawn. The animal seemed to suffer no pain, and in a few seconds sank to his knees and rolled over on his side. While this was taking place the old man before mentioned stood erect and motionless, with his hand over his eyes. When the deer was dead he approached, and taking a handful of hair and blood from the wound, impressively threw it to the

eastward. This was repeated a second time. Upon the killing of the second animal, the wife of the owner cast the hair and blood to the eastward.

Since then I have often observed the man who was selling a deer pluck some hair from the deer and put it in his pocket or throw it to the winds for good luck.

If a man should sell us deer, and the following winter an epidemic break out in his herd, or some calamity befall his family, the Shamans would make him believe that his bad luck was all due to the sale of the deer.

Second. The Siberian deermen are a nonprogressive people. They have lived for ages outside of the activities and progress of the world. As the fathers did, so continue to do their children.

Now, they have never before been asked to sell their deer; it is a new thing to them, and they do not know what to make of it. They were suspicious of our designs. And in reference to this state of mind I have found that being on a Government vessel has been of great assistance. It impresses the natives with confidence that they will be treated honorably and justly. This moral effect was so great that we secured results that otherwise could not have been obtained so easily.

Then, Captain Healy, commander of the *Bear*, is well known for thousands of miles on both sides of the coast, and the natives have confidence in him. With a stranger in command I am confident that but little would have been accomplished in the summer of 1891.

Purchasing reindeer in Siberia is very different from going to Texas and buying a herd of cattle. In Texas such a sale could be consummated in a few minutes or hours. But in Siberia it takes both time and patience.

Upon the anchoring of the ship in the vicinity of a settlement the natives flock aboard, bringing skins and furs to exchange for flour, cotton cloth, powder, lead, etc.

Once aboard they expect to be fed by the captain, and bucket after bucket of hard bread is distributed among them. They know perfectly well that we are after reindeer, but nothing is said about it. They have to be feasted first. They are never in a hurry and therefore do not see why we should be.

After a little small presents are judiciously given to the wife or child of a leading man, and when everyone is in good humor a few of the leaders are taken into the pilot house and the main subject is opened. After much discussion and talking all around the subject, one man is ready to sell twenty and another perhaps only two. After all is arranged the leading men send their servants off after the deer, which may be in the vicinity or four or five days' journey away. Sometimes these delays consume a week or more at a place.

Another difficulty arises from the fact that they can not understand what we want of the reindeer. They have no knowledge of such a motive as doing good to others without pay.

As a rule the men with the largest herds, who can best afford to sell, are inland and difficult to reach.

Then business selfishness comes in. The introduction of the reindeer on the American side may to some extent injuriously affect their trade in deer skins. From time immemorial they have been accustomed to take their skins to Alaska and exchange them for oil. To establish herds in Alaska will, they fear, ruin this business.

Another difficulty experienced was the impossibility of securing a competent interpreter.

A few of the natives of the Siberian coast have spent one or more seasons on a whaler, and thus picked up a very little English. And upon this class we have been dependent in the past.

It is very desirable that a native young man should be secured and trained as an interpreter who could be employed regularly, year after year.

However, notwithstanding all these difficulties and delays, Captain Healy with the *Bear* coasted from 1,200 to 1,500 miles, calling at the various villages and holding conferences with the leading reindeer owners on the Siberian coast. Arrangements were made for the purchase of animals the following season. Then, to answer the question whether reindeer could be purchased and transported alive, sixteen were purchased, kept on shipboard for some three weeks, passing through a gale so severe that the ship had to "lie to," and finally landed in good condition at Amaknak Island, in the harbor of Unalaska, having had a sea voyage of over 1,000 miles.

Thus the results of investigations for 1891 were:

First. The cultivation of the good will of the Siberians.

Second. The actual purchase of sixteen head of reindeer.

Third. That reindeer can be transported with the same facility as other domestic cattle; they being safely loaded, kept on shipboard for three weeks, and landed in good condition 1,000 miles away.

Upon my return to Washington in the fall of 1891 the question was again urged upon the attention of Congress, and on the 17th of December, 1891, the Hon. H. M. Teller introduced a bill (S. 1109) appropriating $15,000, to be expended under the direction of the Secretary of the Interior, for the purpose of introducing and main-

taining in the Territory of Alaska reindeer for domestic purposes. This bill was referred to the Committee on Agriculture and Forestry, Hon. Algernon S. Paddock chairman. The committee took favorable action and the bill was passed by the Senate on May 23, 1892. On the following day it was reported to the House of Representatives and referred to the Committee on Appropriations. A similar bill (H. R. 7764) was introduced into the House of Representatives by Hon. A. C. Durborow and referred to the Committee on Agriculture.

On April 15 Hon. S. B. Alexander, of North Carolina, reported the bill to the House of Representatives with the approval of the Committee of Agriculture. (Appendix D.) The bill was placed on the Calendar.

On the 2d day of May, 1892, I started for my third summer's work on the coast of Siberia and Arctic Alaska in the U. S. S. *Bear*, Capt. M. A. Healy commanding.

In accordance with your instructions, all the time that could be spared from the schools was given to the establishment of the experimental reindeer station.

Upon reaching Unalaska, May 22, I was much encouraged to learn that the reindeer left last fall on Amaknak and Unalaska Islands had wintered successfully and were in good condition, with an increase of two.

We reached Cape Navarin, Siberia, on the 6th of June, and proceeding north called at various points on the coast. Our progress was greatly hindered by heavy fields of ice. The good ship had two anchors ground up and one of the blades of the propeller broken off by the ice. Upon several occasions we were so surrounded that the propeller was stopped and the ship moored to the ice. A less staunch vessel would have been unable to stand the strain. However, during the season five trips were made to Siberia and 175 reindeer purchased, brought over, and landed at the head of Point Clarence, which being the nearest good harbor to Asia on the American side, and a central point for the distribution of deer, I had selected, June 29, as the location of the first reindeer station.

The first installment of deer, numbering 53, was landed at the new station at 6 o'clock on the morning of the 4th of July.

Mr. Miner W. Bruce, of Nebraska, was appointed superintendent of the station and herd, with Mr. Bruce Gibson, of California, as his assistant. (Appendix H.)

Upon the establishment of the experimental reindeer herd at Port Clarence it became important to gain information concerning the surrounding country.

To secure full and reliable information with reference to pasturage in the vicinity of Bering Straits I had the previous season employed Mr. W. T. Lopp, teacher at Cape Prince of Wales, to make two trips northward along the coast in midwinter (1891–'92), when the moss might be expected to be covered with ice and snow (see Appendix E), and in the fall of 1892 sent Mr. Bruce Gibson, assistant superintendent of the reindeer station, with a party of natives, to the northward of Port Clarence (see Appendix F), and a few weeks later Mr. Miner W. Bruce, superintendent of the station. (See Appendix G.)

These several reconnaissances proved both the abundance of moss and its accessibility for winter pasturage to the new station.

A comfortable house, 20 by 60 feet, was erected as a residence for the superintendent and his assistant, and also for the storing of the annual supply of provisions and barter goods.

Close to the main house two comfortable dugouts were built for the use of the herders. Four Siberians, well acquainted with the management of reindeer, were brought over and placed in charge of the herd. With the Siberians were placed a few young men from the Alaskan Eskimo, who are expected to learn the management and care of the herd. The present expectation is to increase the number of Alaskan boys, who shall become apprentices to the herders, and when they have sufficiently learned the business and proved their capability to take care of reindeer, a small herd will be given each one as his start in life. As from year to year the number of such young men is increased and a number of the natives become herders, the herds will naturally become more and more distributed throughout the country until eventually the whole northern region shall be covered with them, as the similar regions of Siberia and Lapland are now covered. (Appendix J.)

With the accomplishment of this result several important objects will be attained.

PERMANENT FOOD SUPPLY.

In the first place, the population, which is now upon the verge of starvation, will be furnished with a permanent, regular, and abundant supply of food. As has already been stated the native supply of food in that region has been destroyed by the industries of the white men. (Appendix K.) The whale and walrus that once teemed in their waters and furnished over half their food supply, have been killed or driven off by the persistent hunting of the whalers. The wild reindeer (caribou) and fur-bearing animals of the land, which also furnished them food and clothing, are largely being destroyed by the deadly breech-loading firearm. It will be impos-

TAKING POSSESSION OF TELLER REINDEER STATION.

sible to restock their waters with whale and walrus in the same way that we restock rivers with a fresh supply of fish. But what we can not do in the way of giving them their former food, we can, through the introduction of the domestic reindeer, provide a new food supply.

Upon our return southward from the Arctic Ocean in the fall of 1891, Captain Healy providentially called at the village on King Island, where we found the population starving. The appeal for food was so pressing that the captain detailed a lieutenant to make a thorough examination of the village, and invited me to accompany him. In a few houses we found that the families in their great distress had killed their sled-dogs to keep themselves from starving. In the larger number of families they were making a broth of seaweed, their only food supply. In all human probability, if the ship had not learned their condition, the following summer not a man, woman, or child would have been left alive to tell the story. A few years ago the same thing happened to three large villages on the Island of St. Lawrence, and when, the following season, the revenue cutter called at the village, the putrefying corpses of the population were found everywhere—on the bed platforms, on the floors, in the doorways, and along the paths, wherever death overtook them.

At King Island, having ascertained the condition of things, a purse was made up from the officers and a few others on board the ship, and the captain steamed some 200 miles to the nearest trading post, and purchased all the provisions that could be obtained, which were taken back to the starving village. This supply sustained the population alive until seal and walrus came some months later around the village. The movement of the seal and walrus, since their numbers have become greatly diminished, is so uncertain that, while a village may have plenty to eat one season they will be on the verge of starvation another.

Siberian deermen brought to Alaska with the first herd.
[From a photo. by Dr. S. J. Call. Published by permission of the Californian.]

In the winter of 1890-91 there was a sufficiency of food at Point Hope. In the winter of 1891-92 the same population had to leave their village and make their way, in some instances hundreds of miles, to other villages to keep from starving. In 1891 one of the teachers on the Kuskokwim River wrote me that the inhabitants of that valley had had but little opportunity during the summer of 1890 to provide a sufficient food supply of fish, that consequently starvation faced them all winter, and that it was with great difficulty that they survived until the fish returned the following season. A teacher on the Yukon River reported this past summer that some of the natives to the north of him had starved to death. This same scarcity of food exists across the entire northern portion of North America, so that now, under the auspices of the Church of England, subscriptions have been opened in London for a famine fund out of which to send relief to the starving Eskimo of Arctic British America. This condition of things will go on, increasing in severity from year to year, until the food supply of the seas and of the land is entirely gone, and then there is nothing left but the extermination of the native population. The general introduction of the domestic reindeer alone will change this entire condition of things, and furnish as reliable supply of food to that people as the herds of cattle in Texas and Wyoming do to their owners, or the herds of sheep in New Mexico and Arizona. The reindeer is the animal which God's providence seems to have provided for those northern regions, being food, clothing, house, furniture, implements, and transportation to the people. Its milk and flesh furnish food. Its mar-

row, tongue, and hams are considered choice delicacies. Its blood, mixed with the contents of its stomach, forms a favorite native dish. Its intestines are cleaned, filled with tallow, and eaten as sausage. Its skin is made into clothes, bedding, tent covers, reindeer harness, ropes, cords, and fish lines. The hard skin of the fore legs makes an excellent covering for snowshoes. Its sinews are made into a strong and lasting thread. Its bones are soaked in seal oil and burned for fuel. Its horns are made into various kinds of household implements, into weapons for hunting, fishing, or war, and in the manufacture of sleds. Then the living animal is trained for riding and dragging of sleds. The general introduction of such an animal into that region will arrest the present starvation and restock that vast country with a permanent food supply. It will revive hope in the hearts of a sturdy race that is now rapidly passing away. Surely, the country that sends shiploads of grain to starving Russians, that has never turned a deaf ear to the call of distress in any section of the globe, will not begrudge a few thousand dollars for the purchase and introduction of this Siberian reindeer, and the rescue of thousands of people from starvation.

REPEOPLING THE COUNTRY.

In the second place, the introduction of domestic reindeer into Alaska will not only thus arrest the present starvation, but will assist in increasing the population. With a more generous food supply this population will commence to increase in numbers. Occupying a region whose climatic conditions are so rigorous that but few white men will ever be willing to make their permanent home in it, it is important, if we would save it from being an unpeopled waste and howling wilderness, that we build up the people who through generations have become acclimated and who are as fervently attached to their bleak and storm-swept plains as the people of temperate and torrid zones to their lands of comfort and abundance.

They are a race worth saving. I find that public opinion, gained perhaps by a more familiar knowledge of the Eskimo of Greenland and Labrador, conceives of the Alaska Eskimos as of the same small type. But this is not true.

In the extreme north, at Point Barrow, and along the coast of Bering Sea they are of medium size. At Point Barrow the average height of the males is 5 feet 3 inches and average weight 153 pounds; of the women, 4 feet 11 inches and weight 135. On the Nushagak River the average weight of the men is from 150 to 167 pounds. From Cape Prince of Wales to Icy Cape and on the great inland rivers emptying into the Arctic Ocean, they are a large race, many of them being 6 feet and over in height. At Kotzebue Sound I have met a number of men and women 6 feet tall. Physically they are very strong, with great powers of endurance. When on a journey, if food is scarce, they will travel 30 to 40 miles without breaking their fast. Lieutenant Cantwell, in his explorations of the Kowak River, makes record that upon one occasion when he wanted a heavy stone for an anchor a woman went out and alone loaded into her birch-bark canoe and brought him a stone that would weigh 800 pounds. It took two strong men to lift it out of the canoe.

Another explorer speaks of a woman carrying off on her shoulder a box of lead weighing 280 pounds. This summer, in erecting the school buildings in the Arctic, there being no drays or horses in that country, all the timbers, lumber, hardware, etc., had to be carried from the beach to the site of the house on the shoulders of the people. They pride themselves on their ability to outjump or outrun any of our race who have competed with them. They can lift a heavier weight, throw a heavy weight farther, and endure more than we. They are a strong, vigorous race, fitted for peopling and subduing the frozen regions of their home.

Arctic and subarctic Alaska cover an empire in extent equal to England, Scotland, France, and Germany. With the covering of those vast plains with herds of domesticated reindeer it will be possible to support in comparative comfort a population of 100,000 people where now 20,000 people have a precarious support. To bring this about is worthy the fostering care of the General Government.

CIVILIZATION OF THE ESKIMOS.

Thirdly, the introduction of domestic reindeer is the commencement of the elevation of this race from barbarism to civilization. A change from the condition of hunters to that of herders is a long step upward in the scale of civilization, teaching them to provide for the future by new methods.

Probably no greater returns can be found in this country from the expenditure of the same amount of money than in lifting up this native race out of barbarism by the introduction of reindeer and education.

ARCTIC TRANSPORTATION.

Fourthly, the introduction of the domestic reindeer will solve the question of arctic transportation. (Appendix L.) The present transportation of that region is by dog sleds. One load of supplies for the trader or traveler requires a second load

of food for the two teams of dogs, and they make but short distances per day. This difficulty of transportation has been one great drawback to the development of the country. It has interfered with the plans of the fur trader; it has interfered with Government exploration. Only three years ago, when the United States Coast and Geodetic Survey sent two parties to determine the international boundary between Alaska and British America, the small steamer that was conveying the supplies up the Yukon River was wrecked, and it was with the utmost difficulty that the surveying parties were kept from starvation, because of the difficulty of sending sufficient food 2,000 miles along that great valley by dog sleds. If reindeer had been introduced into the country there would have been no such difficulty in furnishing food. Bills have been before Congress for several years proposing to establish a military post in the Yukon Valley. If such a post is established it is not at all improbable that a combination of circumstances may arise some winter by which the forces that shall be stationed there will be reduced to starvation, unless reindeer transportation shall have become so systematized that food can readily be sent in from other regions. The same is true with reference to the Government officials whom it may be found necessary to station in that region.

The same is true of the forty or more missionaries and their families that are now scattered through that vast region; also, of the teachers and their families whom the Government has sent into that country.

These are now separated from all communication with the outside world, receiving their mail but once a year. With reindeer transportation they could have a monthly mail.

During the past three years the whalers have been extending their voyages east of Point Barrow to the mouth of the Mackenzie River, and wintering at Herschel Island. To the owners of this property it would be worth tens of thousands of dollars if they could hear from their vessels in the winter, before new supplies and additional vessels are sent out in the spring. But this can not now be done. Last winter letters were sent out from the field, overland, by Indian runners that ascended the Mackenzie, crossed over to the Porcupine, and descended the Porcupine and Yukon rivers down to St. Michael, on the coast. It was ten months before those letters reached their destination. It was a great satisfaction to the owners to hear of the welfare of their ships and crews, but the news was too late for business purposes. Millions of dollars' worth of property and thousands of lives are involved in the whaling business. With the introduction of domestic reindeer into that region it will be both feasible and perfectly practicable to establish a reindeer express during the winter from the Arctic coast down to the North Pacific coast of Alaska.

The southern coast of Alaska on the Pacific Ocean never freezes, and is accessible all the year round to vessels from San Francisco or Puget Sound.

A reindeer express across Alaska, from the Arctic to the Pacific Ocean, would have a corresponding commercial value to that section as the telegraph between New York and London to theirs. It would enable the owners of the whaling fleet to avail themselves of the latest commercial news and keep a more perfect control over their business.

COMMERCIAL VALUE.

In the sixth place, the introduction of domesticated reindeer will add a new industry to that country, which will go to swell the aggregate of national wealth. Lapland sends to market about 22,000 head of reindeer a year, the surplus of her herds.

Through Norway and Sweden smoked reindeer meat and smoked reindeer tongues are everywhere found for sale in their markets, the hams being worth 10 cents a pound and the tongues 10 cents apiece. There are wealthy merchants in Stockholm whose specialty and entire trade is in these Lapland products. The reindeer skins are marketed all over Europe, being worth in their raw condition from $1.50 to $1.75 apiece. The tanned skins (soft, with a beautiful yellow color) find a ready sale in Sweden, at from $2 to $2.75 each. Reindeer skins are used for gloves, military riding trousers, and the binding of books. Reindeer hair is in great demand for the filling of life-saving apparatuses, buoys, etc., and from the reindeer horns is made the best existing glue. One great article, smoked reindeer tongues, and tanned skins are among the principal products of the great annual fair at Nizhnee Novgorod, Russia. In Lapland there are about 400,000 head of reindeer, sustaining in comfort some 26,000 people. There is no reason, considering the greater area of the country and the abundance of reindeer moss, why arctic and subarctic Alaska should not sustain a population of 100,000 people with 2,000,000 head of reindeer. In Lapland the reindeer return a tax of $1 a head to the Government, so that they yield an annual revenue to the Government of $400,000.

With the destruction of the buffalo the material for cheap carriage and sleigh robes for common use is gone. Bear and wolf skins are too expensive; but with the introduction of the reindeer their skins would to a certain extent take the place of the extinct buffalo.

The commercial importance of introducing domesticated reindeer in Alaska was so manifest that shrewd business men on the Pacific Coast at once appreciated the great possibilities involved, and hastened, through their chambers of commerce and boards of trade, to take action, urging their several delegations in Congress to do what they could to secure an appropriation of money for these purposes. (Appendix N.)

Under favorable circumstances a swift reindeer can traverse 150 miles in a day. A speed of 100 miles per day is easily made. As a beast of burden it can draw a load of 300 pounds.

The progress of exploration, settlement, development, government, civilization, education, humanity, and religion are all largely dependent in that region on reindeer transportation.

If there is any measure of public policy better established than another, or more frequently acted upon, it has been the earnest and unceasing efforts of Congress to encourage and aid in every way the improvement of stock, and the markets of the world have been searched for improved breeds. The same wise and liberal policy will make ample provision for the introduction of the reindeer, which, of all animals, is the most serviceable and indispensible to man in high northern latitudes.

If it is sound public policy to sink artesian wells or create large water reservoirs for reclaiming large areas of valuable land otherwise worthless; if it is the part of national wisdom to introduce large, permanent, and wealth-producing industries where none previously existed, then it is the part of national wisdom to cover that vast empire with herds of domestic reindeer—the only industry that can live and thrive in that region—and take a barbarian people, on the verge of starvation, lift them up to a comfortable support and civilization, and turn them from consumers into producers of national wealth.

It will be noticed that the sum asked from Congress is only $15,000. I hope that this will not be misunderstood and taken as a measure of the importance of the movement, for if the proposed results could not be obtained with any less sum an appropriation of hundreds of thousands of dollars would be both wise and economical.

But so small a sum is accepted on the ground of proceeding with extreme caution. It is the commencement of a great movement that will, if successful, extend its beneficial influences as long as the world stands. Therefore we move slowly and carefully at first, in order to secure that success. Commencing in a small way, the first outlay of money is not large.

In 1891 the 16 reindeer purchased averaged $10.25 each. This last season the general average was brought down to $5 each.

So far the purchase of the reindeer has been defrayed from the money contributed by benevolent individuals.

REVENUE-MARINE SERVICE.

These gratifying results, however, could not have been attained without the hearty and active cooperation of the Revenue-Marine Service.

If this office had been required to charter a vessel for the transporting of the reindeer nothing could have been done with the small sum at our disposal.

But the Secretary of the Treasury directed that the revenue cutter *Bear*, in addition to her regular duties of patrolling the Seal Islands and the coasts of Bering Sea and the Arctic Ocean, following the whaling fleet, and inspecting the refuge station at Point Barrow, should also give what time was possible to transporting the reindeer.

To the captain, officers, and crew of the *Bear* is due much praise for the hard work done by them.

Special thanks are due Capt. M. A. Healy for his earnestness and efficiency in doing his part of the work; also to Lieut. D. H. Jarvis, Surg. S. J. Call, and Assistant Engineer Falkenstein, who were in charge of much of the shore work of loading and unloading the deer.

APPENDIX A.

[House Report No. 3414, Fifty-first Congress, second session.]

Mr. McComas, from the Committee on Education, submitted the following report (to accompany H. Res. 258):

The Committee on Education reports favorably House joint resolution 258, with sundry amendments recommended by the committee.

Congress has passed several acts encouraging the establishment of agricultural schools and experiment stations in the different States and Territories.

SIBERIAN HERDERS.

These several acts require the assent of the legislatures of the several States and Territories before their provisions become available; but as Alaska has no legislature, it is the only Territory which is unable to avail itself of the benefits and provisions of these acts.

This bill proposes to extend to Alaska the benefits and provisions of the agricultural acts through the Secretary of the Interior, in like manner to the other Territories. The acts are recited in the preamble to the joint resolution.

There has been very wide divergence of views with regard to the agricultural and horticultural capabilities of Alaska, or whether it has any agricultural capabilities at all.

This bill would secure the establishment of an experimental station in southern Alaska, which has a temperate climate, and test the question of what can and what can not be raised to advantage.

This would be of very great service, both to the natives, who, through the Government schools, are coming into our civilization, and to the white settlers who may locate in that vast region, which embraces about 580,000 square miles.

There are hundreds of thousands of square miles of area within the Arctic regions of Alaska that, there is no question, can never be adapted to ordinary agricultural pursuits, nor utilized for purposes of raising cattle, horses, or sheep; but this large area is especially adapted for the support of reindeer.

This bill will enable the Secretary of the Interior, through the Government industrial schools, to make the stock-raising of reindeer the great industrial feature of that region.

This will utilize hundreds of thousands of square miles of territory, will build up a large and profitable industry, and, above all, will provide a comfortable support for the native population of that region.

This is the more important at the present time because the American whalers have practically destroyed and driven out the whale and the walrus from the waters adjacent to the coast of Alaska.

The destruction of the whale and walrus has taken away three-fourths of the ordinary food supply of the Eskimo population, and that population to-day on the Arctic coast of Alaska is on the verge of starvation. The large canneries will soon take away the fish supply.

The introduction of tame reindeer from Siberia into Alaska thus has a twofold importance:

(1) As the establishment of a profitable industry.

(2) As a relief of a starving people—a relief that will become more and more valuable as the years roll round; a relief that once established perpetuates itself.

This project is wiser than to pauperize the people of Alaska.

The revenue from that country warrants this attempt to make these people self-sustaining.

The lease of the Seal Islands by the United States Treasury Department to the North American Commercial Company, on the basis of 100,000 skins, ought to yield a revenue of about $1,000,000 annually. Under the old lease the revenue was $317,500 annually.

The extending to Alaska of the benefits of the agricultural bill approved August 30, 1890, would give for the year ending June—

1890	$15,000
1891	16,000
1892	17,000
Total	48,000

From the act establishing agricultural experiment stations approved July 2, 1862, the sum of $15,000.

The joint resolution would therefore carry for the year ending June 30, 1892, $93,000, and for the following year, $33,000.

The committee report, therefore, this joint resolution, with the following amendments and recommend that it pass:

In line 4, page 2, after the word "to," insert "give any assent required by either of said acts, and to."

In line 4, page 2, after the word "benefits," insert "and provisions."

In line 6, page 2, after "Territory," insert "of Alaska."

In line 7, page 2, after the word "acts," add "in like manner as for any other Territory."

APPENDIX B.—LIST OF CONTRIBUTIONS TO THE REINDEER FUND, 1891.

1891.		
May 15.	Miss H. S. Benson, Philadelphia	$200.00
	John N. Brown, Providence, R. I	200.00
	Jane N. Grew, Boston	30.00
	Mary P. Gardner, New York	10.50
	Sarah B. Reynolds, Kingston, N. Y	10.00
	Mrs. H. B. Otis, Roxbury, Mass	10.00
	M. A. and S. H. Foster, Portsmouth, N. H	10.00
June 10.	Boston Transcript, from various persons	289.00
	E. G. Read, Somerville, N. J	10.00
	Effe V. V. Knox, New York	10.00
	Mrs. N. Williamson, Brunswick, N. J	10.00
	E. E. V., 140 Lanvale street, Baltimore, Md	1.00
	Helen B. French, Beloit, Wis	10.00
	Mary Ellen Smith, Philadelphia, Pa	10.00
	Judge E. R. Hoar, Concord, Mass	10.00
	C. H. Barstow, Crow Agency, Mont	15.00
	M. E. D., per Boston Transcript	1.00
	A. F. Allyn, Chelsea, Mass	1.00
	R. P. Wainwright, Asheville, N. C	10.00
	M. A. Haven and Annie W. Davis, Portsmouth, N. H	10.00
	Mary Hemingway, Boston, Mass	100.00
	The Mail and Express	500.00
	Mrs. William Thaw	50.00
	Five children in one family, one reindeer each	50.00
	Mrs. F. L. Achey	20.00
	M. E. P	50.00
	The young ladies of Rye Seminary, Rye, N. Y	50.00
	Mary L. Parsons	20.00
	Y. P. S. C. E., Reformed Church, Mount Vernon	13.65
	Three ladies of East Orange, N. J	12.00
	G. K. Harroun	10.00
	H. G. Ludlow	10.00
	Mrs. H. G. Ludlow	10.00
	Mrs. R. C. Crane	10.00
	Mrs. Edwin G. Benedict	10.00
	Mrs. M. C. Cobb	10.00
	E. M. Chadwick	10.00
	Augusta Moore	10.00
	Rev. William T. Doubleday	10.00
	E. M. Eames	10.00
	Charles H. Wells	10.00
	A. R. Slingushard	10.00
	James M. Ham	10.00
	Mrs. James M. Ham	10.00
	Mrs. Robert I. Brown	10.00
	William Rust	10.00
	Mrs. Levi S. Gates	10.00
	Bethlehem Chapel Mission School	10.00
	Mrs. Richard L. Allen	10.00
	Miss M. I. Allen	10.00
	E. Holman	10.00
	C. and family, East Orange, N. J	10.00
	J. Van Santwood	5.00
	James F. E. Little	5.00
	Frederick W. Stoneback	5.00
	J. H. Charles	5.00
	V. Thompson	5.00
	W. T. Bliss	5.00
	Howard Wilson	5.00
	G. H. Fleming	5.00
	W. S. Quigley	5.00
	J. Lantz	5.00
	From friends	2.60
	Mrs. L. E. Hastings	1.20
	A. E. Barnes	1.00
	Amelia J. Burt	1.00
	W. A. Deering	5.00

APPENDIX B—Continued.

1891.		
June 10.	L. F. Golding	$5.00
	J. A. Hennessy	5.00
	R. H. Stoddard	5.00
	William R. Worrall	5.00
	H. W. Dourmett	5.05
	Betty Deming (a child)	10.00
	John Deming (a child)	10.00
	Anonymous	10.00
	Little Lights Society	5.00
	Mrs. Edmund T. Lukens	5.00
	W. S	5.00
	Cuttenden Hull, A	10.00
	Mrs. Clinton B. Fisk	10.00
	W. U. A	20.00
	Thomas Harrington	10.00
	E	10.00
June 18.	Mrs. Debbie H. Parker, Charlottesville, Ind	5.00
	Gen. E. E. Whittlesey, Washington, D. C	10.00
1892.		
Feb. 1.	Miss Mary Burroughs, Philadelphia, Pa	5.00
11.	A. D. Simpson, Christiansburg, Va	10.00
	Total	2,146.00

Of the above amount, $1,158 was collected through the Mail and Express, of New York.

APPENDIX C.—TENT LIFE IN SIBERIA.

By GEORGE KENNAN.

[Published by George P. Putnam's Sons. 1870. Page 116.]

Among the many superstitions of the Wandering Koraks and Chookchees one of the most noticeable is their reluctance to part with a living reindeer. You may purchase as many dead deer as you choose, up to 500, for about 70 cents apiece; but a living deer they will not give to you for love nor money. You may offer them what they consider a fortune in tobacco, copper kettles, beads, and scarlet cloth for a single live reindeer, but they will persistently refuse to sell him. Yet, if you will allow them to kill the very same animal you can have his carcass for one small string of common glass beads. It is useless to argue with them about this absurd superstition. You can get no reason for it or explanation of it, except that to sell a live reindeer would be "atkin" (bad). As it was very necessary in the construction of our proposed telegraph line to have trained reindeer of our own we offered every conceivable inducement to the Koraks to part with one single deer; but all our efforts were in vain. They could sell us 100 dead deer for 100 pounds of tobacco, but 500 pounds would not tempt them to part with a single animal as long as the breath of life was in his body. During the two years and a half which we spent in Siberia no one of our parties, so far as I know, ever succeeded in buying from the Koraks or Chookchees a single living reindeer.

APPENDIX D.—DOMESTICATED REINDEER IN ALASKA.

[House Report No. 1033, Fifty-second Congress, first session.]

Mr. Alexander, from the Committee on Agriculture, submitted the following report:

The Committee on Agriculture, to whom was referred the bill (H. R. 7764) to secure the introduction of domesticated reindeer into Alaska, report the same with a favorable recommendation. This bill does not properly come within the jurisdiction of the Committee on Agriculture, but should have been considered by the Committee on Appropriations. At the suggestion of the chairman of the Committee on Appropriations the Committee on Agriculture, having heard the testimony of the missionaries from Alaska, the Commissioner of Education, and others in regard to the merits of the bill, have considered it and recommend its passage.

The testimony showed that there are no reindeer in Alaska; that Alaska could support many times enough reindeer to furnish the inhabitants with food and clothing,

and that the reindeer skins are indispensable for clothing; that the whale and walrus, the principal supply of food, have been destroyed to such an extent as to cause much suffering for food; that dogs are used for transportation, and in many places the supply of food is becoming so scarce that the natives are compelled to eat their dogs, thus depriving them of the means of hauling their supplies; that for the development of the country the domesticated reindeer is absolutely indispensable; that the domesticated reindeer can make a speed of 19 miles an hour, and that a fair average rate of speed is 12 miles per hour; and this means of transportation is necessary to develop the gold fields of the interior, which can only be worked from two to two and one-half months a year; that the reindeer would be distributed at the Government schools, the native youths taught to herd and raise them, the increase to be given to worthy students and native teachers for services rendered; that this will induce the natives to become herders, be self-supporting, and not a charge upon the Government; that the natives have no vessels that can transport the live reindeer from Siberia to Alaska; that the vessels from San Francisco to Alaska leave the 1st of May to the 1st of June, none later than the last date mentioned, and that if anything be done this year, it is absolutely necessary to get the appropriation in time to send the goods for the purchase of the reindeer by the revenue cutter that leaves San Francisco the 1st of June.

The description given by the missionaries and others of the country, the habits of the natives, etc., was interesting. The distress caused by the continued failure of the food supply shows plainly that the natives will not be able to sustain themselves and will become a charge upon the Government. For these and other reasons the Committee on Agriculture urge the passage of this bill.

APPENDIX E.—MR. W. T. LOPP'S RECONNOISSANCE ALONG THE COAST NORTH OF BERING STRAITS.

CAPE PRINCE OF WALES, ALASKA,
January 20, 1892.

DEAR SIR: According to your instructions, I have made two expeditions up the coast north of here, and submit you the following report:

In November employed Eskimo, dogs, and sled and explored west shore of Louge Inlet or Lake, just north of Cape Prince of Wales, up to its head, where Grouse River empties into it. The mountains (see chart inclosed) were sloping and rolling, not sharp and rocky, and covered with moss. Portions of these hills were covered with 3 to 5 inches of snow, but all the exposed portions were free from any snow. This inlet is about 30 miles long and has two outlets to the sea. Along the banks of Grouse River are acres of bushes (3 to 6 feet), hundreds of ptarmigan, and nice sized fish in the river.

On December 27 started with boy, dogs, and sled for Ke-gik-tok. Had fine weather—short days—visited about 300 people. Some settlements had plenty of oil, seal meat, and fish, and others had little or none. All were very anxious to have deer introduced. Most of them seem to doubt that ownership would ever pass into their hands. They complain that they have to pay exorbitant prices to Cape Prince of Wales chiefs for deerskins. They reported moss very plentiful. At that time there was so little snow that it would be unnecessary to graze deer on the mountain side. I could see that the smooth expanse of country from coast to mountain was covered with only 3 or 4 inches of soft snow, no crusts or ice. (Unlike last winter, there have been no thaws this winter, consequently no ice crust on snow.) These coast people live on seal meat, oil, fish, ptarmigan, and squirrel. They are not a trading people, have had little or no intercourse with ships; are honest, industrious, and healthy.

Found a very prosperous settlement at Ke-gik-tok of 80 people. Asked me to bring the school up there, etc.

I think several hundred deer could be grazed along the hills from Cape Prince of Wales to Ke-gik-tok. I am satisfied from what I have seen and heard that there are hundreds of acres of good grazing land extending from the coast back to rivers flowing into lakes back of Port Clarence and those flowing into Kotzebue Sound. Settlements are so distributed along the coast from Cape Prince of Wales to Kotzebue Sound that deer men along the mountains could easily be supplied with seal oil and meat. And if inclosures are ever necessary there are plenty of bushes in small rivers to make them. I think these coast people are better situated and adapted for herding than any other Alaskan people.

They are all superstitious and are great cowards after dark. Perhaps it will be necessary to have them stand watch at night in pairs until they become accustomed

to the darkness. (One Eskimo never goes any place after dark if he can help it. He sees ghosts; but is all right with a companion.)

Hoping and trusting that we may sometime have occasion to make use of knowledge obtained on these two little expeditions, I am,

Very truly yours,

W. T. LOPP.

Dr. SHELDON JACKSON, *Washington, D. C.*

APPENDIX F.—RECONNOISSANCE NORTH OF PORT CLARENCE BY BRUCE GIBSON.

REINDEER STATION, PORT CLARENCE, ALASKA,
August 2, 1892.

SIR: I respectfully submit herewith report of expedition made by Mr. Gibson into interior, north of station, for the purpose of ascertaining probable condition of grazing for reindeer during winter months—copied from his notes as follows:

"I started on expedition July 27, leaving station at 12 o'clock noon; taking with me as guide Charley, as expert on pasturage Chief Herder Pungen, and five natives to pack tent and supplies. Traveled in a northwesterly direction, and for about 4 miles found good feed and several small lakes. I then changed my course to north for about three-quarters of a mile and found scarcely any feed, it being very rocky and barren; I then went west again for 7 miles and camped at a river about 30 feet wide. The first quarter of a mile of this last course was very rocky, bowlders from 4 to 6 feet through being plentiful, the remainder of the distance being good feeding grounds.

"The next day started north and traveled in that direction for about 9 miles and found good pasturage on east side most of the way, and wild flowers and berries grew in places; the west side of river is barren and very perpendicular in several places. I then traveled to west, and for a short distance on a small river found some feed, but after traveling for 1 mile I retraced my steps and went to northeast for about 3 miles, when men began to complain of being tired and I ordered a halt for the night on a small stream running toward the east. To northeast I saw good indications of feed.

"The next morning I got an early start, taking with me the guide and herder and leaving the others behind to try and find a place to camp that night, having to go without fire the previous night and this morning. I crossed the small river and traveled north. For the first 2 miles there was but a small quantity of feed, having passed over some very rocky ground. The next 3½ miles there is good pasturage, being plenty of grass and considerable moss. I crossed two small streams in this course. Traveled east to get around some large hills; at about one-half mile came to a large mound of slaty rock—mound about 30 feet high and 150 feet across. For 1 mile east found good pasture; crossed a small stream running southeast; changed to north and for 1 mile found good grazing ground; halted at a large cluster of rock for lunch and shelter from rain; found a white surface on one of the rocks, and I made the following inscription:

"'B. Gibson, July 29, 1892, 12 m., from Reindeer station.' Resumed march to north and for 2 miles found good pasturage; crossed a small stream running to south. About 1 mile south is a lake. Changed course to east for 3 miles; crossed one stream and found good feed in abundance. The land was of a rocky nature. Started to return to camp and traveled southwest for 7 miles to where I gave orders for camp to be located, but found they had gone farther east. I crossed over good feeding ground of a boggy nature, similar to that surrounding station. The herder said it was the best seen since starting on expedition; it was mostly lowland and some low rock hills. I found the camp 2 miles east of where I expected it to be.

"The fourth day I started east and traveled for 4 miles over low hills, the surface being of a broken nature and containing abundance of feed; coming to high hills, changed course to southeast for 2½ miles, finding fair pasturage and ground slightly rocky. Sent packers on to river to find suitable camping grounds for night. I traveled 5 miles to northeast, finding good pasturage of a boggy nature; crossed one small stream. Changed to southeast 1 mile and south 1 mile, finding good pasturage on low hills; changed to southwest over low, hilly, and rocky land, in some places slightly boggy; the feed on this last course was abundant and of a good quality.

"*Fifth day.*—It stormed hard last night and blew the tent down about 3 o'clock. I broke camp about 7 o'clock and started for the station, taking a southwest course. After traveling for about 5 miles I crossed a small stream running very rapidly toward the northeast. The land was low hills and furnished abundance of feed. I traveled 2 miles farther in the same direction and crossed a large stream with swift current and running northeast; the feed and land the same as passed earlier

in the day. Continuing in same direction, but a little more to west for 4 miles, I traveled over low hills; good pasturage and plenty of moss. I crossed large hill to north of station; found it barren and very high and rocky. It is about 1 mile from bottom of hill to open land, and from there on to station is good grazing land. I arrived at station at 4.15 in the afternoon. It had stormed hard from the time I left until my return, raining and blowing hard.

"In closing, I will say the herder told me the ground passed over was very good and equaled and in places excelled the pasturage in Siberia. He further stated that the pasturage surrounding station was sufficient for a year, providing that in the winter there was not over 1 foot of snow nor over 1½ inches of icy crust on top. If the ice comes first and the snow later, it is impossible for the deer to dig out the feed.

"I noticed in my travels that the feed was on low hills and lowlands, the high hills being barren.

"The guide, Charley, said that for a long distance into the interior the lowlands were the same as passed over, thus showing that, should it be necessary to go to the interior this winter, there will surely be plenty of feed for the reindeer."

Very respectfully,

MINER W. BRUCE, *Teacher.*

Rev. SHELDON JACKSON,
General Agent of Education in Alaska.

APPENDIX G.—RECONNOISSANCE EAST OF PORT CLARENCE, BY MINER W. BRUCE.

REINDEER STATION, PORT CLARENCE, ALASKA,
August 19, 1892.

SIR: In your letter of instructions for the government of this station, dated July 4, ultimo, you suggest, among other things, that two expeditions be sent out for the purpose of ascertaining the prospects for winter grazing for the reindeer should the country in this immediate vicinity become covered with ice or deep snow, thus preventing the deer from pawing through it for food.

One route designated by you was to the north for the station, in the direction of Kotzebue Sound; and in accordance with your instructions Mr. Gibson, on the 27th ultimo, made a trip in that direction, lasting four days and a half, the result of which I communicated to you officially on the 2d day of the present month.

On the 3d instant I started on a trip to the northeast with an oomeak and seven natives, expecting, if my health permitted, to be gone ten days or two weeks.

Our route lay through Grantley Harbor into Imurock Lake, and having a fair wind we made a splendid day's sail, taking us about halfway through the lake, and camping the first night on the west side.

I wish especially to call your attention to the route from Grantley Harbor into Imurock Lake, as it affords, in the event of severe storms, unusual shelter for the deer.

A narrow passage, probably 6 miles in length, connects these two beautiful bodies of water, and as it winds its zigzag course along the line of bluffs on each side, which commence immediately on leaving Grantley Harbor, is unbroken until Imurock Lake is reached. The passage seems to be of nearly an uniform width, and will not exceed, at its widest part, one-quarter of a mile. The bluffs on both sides are about 200 feet high, and there appears to be water sufficient to float an ocean vessel.

At several places along the route I left the oomeak, and with the Siberian herder went to the top of the bluff and found the country to the north a gently undulating table-land, and with my glasses I could see that for several miles this character of country did not seem to change.

On the south side the same aspect of country appeared, but 4 or 5 miles to the south the country became more broken, and took in what appeared to be low mountains.

The whole surface of the country on both sides was covered with a luxuriant growth of low bushes, occasional patches of grass, having the appearance of blue joint, and what was certainly red-top grass and mosses.

Even on this table-land the surface of the country was very uneven, being in places hummocky, and the little spots between seemed to be marshy and often filled with water.

The Siberian herder seemed much pleased with the character of the feed, and frequently pointed out the different kinds of grasses or shrubbery that the deer were fond of, and always designated the moss as choice winter grazing.

From the natives in my party I learned that the snow in this passage does not reach a depth of over 1 foot, and usually less; also, that when one side of the passage is covered with snow, the other is lightly covered. If this be true, it would appear that the deer, if it becomes necessary to move them from the station, can find good grazing either one side or the other of the passage; and in severe storms a refuge may be had behind the high walls of the bluffs.

On the morning following our first day's sail I took the herder to the top of the hill just back of our camp. It is probably 400 or 500 feet high and runs out to a point into Imuruk Lake. From its top a splendid view of the country in every direction is had. The general contour, as far as I could see, was the same as that observed from the bluffs along the narrow passage. My position commanded a view to the northwest, north, and northeast, and for a distance of 25 miles at least the same character of country prevailed. As far as the eye could reach not a mountain was visible and not a speck of snow was seen.

To the west there were several miles of what appeared to be a marsh, or a very low land, covered with little patches of water back from the lake. These gradually disappeared in the north, where the land became higher and of the same general character I found farther to the south.

From my position I could see the faint outline of the north end of the lake, probably 12 or 15 miles away, and I thought I could discern the winding course of a river coursing through the table-lands to the north, and if so, it was probably the Agee-eepuk River.

On the sides and top of the hill from which I was making my observations there was a thick growth of the same kind of grasses and shrubbery found the day before. I was surprised to find along the route to the top of the hill patches of low willow and elder bushes, from the branches of which twittered and flitted small birds, and every few paces we advanced aroused ptarmigan in large numbers.

There was nothing in the appearance of the country, so far as I could see, that would suggest anything like what one would expect to find bordering on the Arctic circle. On the contrary, the vegetation, much of it, was such as is found in temperate climates, and the birds and insects of the same variety that abound in country where the mercury never ranges lower than zero.

From my position on the top of the hill I could see what appeared to be a break in the range of mountains on the south side of the lake, and as the wind was blowing from the north, thus preventing farther advance in the present state of the weather, I concluded to sail to the other side and investigate the country in that direction.

The distance across was about 4 miles, but the wind died out when about halfway across, and we were compelled to paddle the rest of the way, a very slow process of travel in an oomeak.

On reaching shore we went into camp, and after dinner I started with the natives for the mountains. My purpose was to simply get an idea of the country between the shore of the lake and the foot of the mountains that day, and take all of the next for determining the extent of the pass.

All the afternoon we traversed the lowlands toward the mountains and found the same general growth of vegetation as that found before. It could not well be of thicker growth or to all appearances more nutritious. If anything there was more moss, and perhaps the low bushes hung fuller with blueberries than any found before. There were several small mountain streams leading across to the lake, and if they were supplied from melting snow it was far up or hidden between narrow gorges, as none were seen from where we traveled.

It was after 6 o'clock when we returned to camp, and before retiring the natives understood that on the morrow we were going to try to find a passage into the interior.

Accordingly by 7 o'clock we were ready to begin our tramp. We took with us an ax, spade, field glass, and two hard-tack apiece. Our course lay across the lowlands toward what appeared to be a break in the mountains, and it was at least 7 miles from camp across to the entrance. Part of the distance lay over comparatively smooth land, and a considerable portion over hummocky ground. There did not appear to be any difference in the thickness of the vegetation or the variety in these two different surfaces, but the rough ground was the most tedious I have ever attempted to travel over. The little ridges or hummocks are too wide to step over and too shaky to stand upon, so that our trip over this section was a series of ups and downs, mostly the latter.

At our stops for rest I had holes dug with the spade and was surprised to find a black, sandy soil, from 1 foot to 3 feet deep, in nearly every instance. Sometimes we could not dig more than a few inches on account of encountering stone or slabs of rock, but this was not the rule. I thought I discovered the secret of such a heavy and luxuriant vegetation here from the rich class of the soil and the abundance of water.

The commercial importance of introducing domesticated reindeer in Alaska was so manifest that shrewd business men on the Pacific Coast at once appreciated the great possibilities involved, and hastened, through their chambers of commerce and boards of trade, to take action, urging their several delegations in Congress to do what they could to secure an appropriation of money for these purposes. (Appendix N.)

Under favorable circumstances a swift reindeer can traverse 150 miles in a day. A speed of 100 miles per day is easily made. As a beast of burden it can draw a load of 300 pounds.

The progress of exploration, settlement, development, government, civilization, education, humanity, and religion are all largely dependent in that region on reindeer transportation.

If there is any measure of public policy better established than another, or more frequently acted upon, it has been the earnest and unceasing efforts of Congress to encourage and aid in every way the improvement of stock, and the markets of the world have been searched for improved breeds. The same wise and liberal policy will make ample provision for the introduction of the reindeer, which, of all animals, is the most serviceable and indispensible to man in high northern latitudes.

If it is sound public policy to sink artesian wells or create large water reservoirs for reclaiming large areas of valuable land otherwise worthless; if it is the part of national wisdom to introduce large, permanent, and wealth-producing industries where none previously existed, then it is the part of national wisdom to cover that vast empire with herds of domestic reindeer—the only industry that can live and thrive in that region—and take a barbarian people, on the verge of starvation, lift them up to a comfortable support and civilization, and turn them from consumers into producers of national wealth.

It will be noticed that the sum asked from Congress is only $15,000. I hope that this will not be misunderstood and taken as a measure of the importance of the movement, for if the proposed results could not be obtained with any less sum an appropriation of hundreds of thousands of dollars would be both wise and economical.

But so small a sum is accepted on the ground of proceeding with extreme caution. It is the commencement of a great movement that will, if successful, extend its beneficial influences as long as the world stands. Therefore we move slowly and carefully at first, in order to secure that success. Commencing in a small way, the first outlay of money is not large.

In 1891 the 16 reindeer purchased averaged $10.25 each. This last season the general average was brought down to $5 each.

So far the purchase of the reindeer has been defrayed from the money contributed by benevolent individuals.

REVENUE-MARINE SERVICE.

These gratifying results, however, could not have been attained without the hearty and active cooperation of the Revenue-Marine Service.

If this office had been required to charter a vessel for the transporting of the reindeer nothing could have been done with the small sum at our disposal.

But the Secretary of the Treasury directed that the revenue cutter *Bear*, in addition to her regular duties of patrolling the Seal Islands and the coasts of Bering Sea and the Arctic Ocean, following the whaling fleet, and inspecting the refuge station at Point Barrow, should also give what time was possible to transporting the reindeer.

To the captain, officers, and crew of the *Bear* is due much praise for the hard work done by them.

Special thanks are due Capt. M. A. Healy for his earnestness and efficiency in doing his part of the work; also to Lieut. D. H. Jarvis, Surg. S. J. Call, and Assistant Engineer Falkenstein, who were in charge of much of the shore work of loading and unloading the deer.

APPENDIX A.

[House Report No. 3414, Fifty-first Congress, second session.]

Mr. McComas, from the Committee on Education, submitted the following report (to accompany H. Res. 258):

The Committee on Education reports favorably House joint resolution 258, with sundry amendments recommended by the committee.

Congress has passed several acts encouraging the establishment of agricultural schools and experiment stations in the different States and Territories.

SIBERIAN HERDERS.

These several acts require the assent of the legislatures of the several States and Territories before their provisions become available; but as Alaska has no legislature, it is the only Territory which is unable to avail itself of the benefits and provisions of these acts.

This bill proposes to extend to Alaska the benefits and provisions of the agricultural acts through the Secretary of the Interior, in like manner to the other Territories. The acts are recited in the preamble to the joint resolution.

There has been very wide divergence of views with regard to the agricultural and horticultural capabilities of Alaska, or whether it has any agricultural capabilities at all.

This bill would secure the establishment of an experimental station in southern Alaska, which has a temperate climate, and test the question of what can and what can not be raised to advantage.

This would be of very great service, both to the natives, who, through the Government schools, are coming into our civilization, and to the white settlers who may locate in that vast region, which embraces about 580,000 square miles.

There are hundreds of thousands of square miles of area within the Arctic regions of Alaska that, there is no question, can never be adapted to ordinary agricultural pursuits, nor utilized for purposes of raising cattle, horses, or sheep; but this large area is especially adapted for the support of reindeer.

This bill will enable the Secretary of the Interior, through the Government industrial schools, to make the stock-raising of reindeer the great industrial feature of that region.

This will utilize hundreds of thousands of square miles of territory, will build up a large and profitable industry, and, above all, will provide a comfortable support for the native population of that region.

This is the more important at the present time because the American whalers have practically destroyed and driven out the whale and the walrus from the waters adjacent to the coast of Alaska.

The destruction of the whale and walrus has taken away three-fourths of the ordinary food supply of the Eskimo population, and that population to-day on the Arctic coast of Alaska is on the verge of starvation. The large canneries will soon take away the fish supply.

The introduction of tame reindeer from Siberia into Alaska thus has a twofold importance:

(1) As the establishment of a profitable industry.

(2) As a relief of a starving people—a relief that will become more and more valuable as the years roll round; a relief that once established perpetuates itself.

This project is wiser than to pauperize the people of Alaska.

The revenue from that country warrants this attempt to make these people self-sustaining.

The lease of the Seal Islands by the United States Treasury Department to the North American Commercial Company, on the basis of 100,000 skins, ought to yield a revenue of about $1,000,000 annually. Under the old lease the revenue was $317,500 annually.

The extending to Alaska of the benefits of the agricultural bill approved August 30, 1890, would give for the year ending June—

1890	$15,000
1891	16,000
1892	17,000
Total	48,000

From the act establishing agricultural experiment stations approved July 2, 1862, the sum of $15,000.

The joint resolution would therefore carry for the year ending June 30, 1892, $93,000, and for the following year, $33,000.

The committee report, therefore, this joint resolution, with the following amendments and recommend that it pass:

In line 4, page 2, after the word "to," insert "give any assent required by either of said acts, and to."

In line 4, page 2, after the word "benefits," insert "and provisions."

In line 6, page 2, after "Territory," insert "of Alaska."

In line 7, page 2, after the word "acts," add "in like manner as for any other Territory."

APPENDIX B.—LIST OF CONTRIBUTIONS TO THE REINDEER FUND, 1891.

1891.		
May 15.	Miss H. S. Benson, Philadelphia	$200.00
	John N. Brown, Providence, R. I	200.00
	Jane N. Grew, Boston	30.00
	Mary P. Gardner, New York	10.50
	Sarah B. Reynolds, Kingston, N. Y	10.00
	Mrs. H. B. Otis, Roxbury, Mass	10.00
	M. A. and S. H. Foster, Portsmouth, N. H	10.00
June 10.	Boston Transcript, from various persons	289.00
	E. G. Read, Somerville, N. J	10.00
	Effe V. V. Knox, New York	10.00
	Mrs. N. Williamson, Brunswick, N. J	10.00
	E. E. V., 140 Lanvale street, Baltimore, Md	1.00
	Helen B. French, Beloit, Wis	10.00
	Mary Ellen Smith, Philadelphia, Pa	10.00
	Judge E. R. Hoar, Concord, Mass	10.00
	C. H. Barstow, Crow Agency, Mont	15.00
	M. E. D., per Boston Transcript	1.00
	A. F. Allyn, Chelsea, Mass	1.00
	R. P. Wainwright, Asheville, N. C	10.00
	M. A. Haven and Annie W. Davis, Portsmouth, N. H	10.00
	Mary Hemingway, Boston, Mass	100.00
	The Mail and Express	500.00
	Mrs. William Thaw	50.00
	Five children in one family, one reindeer each	50.00
	Mrs. F. L. Achey	20.00
	M. E. P	50.00
	The young ladies of Rye Seminary, Rye, N. Y	50.00
	Mary L. Parsons	20.00
	Y. P. S. C. E., Reformed Church, Mount Vernon	13.65
	Three ladies of East Orange, N. J	12.00
	G. K. Harroun	10.00
	H. G. Ludlow	10.00
	Mrs. H. G. Ludlow	10.00
	Mrs. R. C. Crane	10.00
	Mrs. Edwin G. Benedict	10.00
	Mrs. M. C. Cobb	10.00
	E. M. Chadwick	10.00
	Augusta Moore	10.00
	Rev. William T. Doubleday	10.00
	E. M. Eames	10.00
	Charles H. Wells	10.00
	A. R. Slingushard	10.00
	James M. Ham	10.00
	Mrs. James M. Ham	10.00
	Mrs. Robert I. Brown	10.00
	William Rust	10.00
	Mrs. Levi S. Gates	10.00
	Bethlehem Chapel Mission School	10.00
	Mrs. Richard L. Allen	10.00
	Miss M. I. Allen	10.00
	E. Holman	10.00
	C. and family, East Orange, N. J	10.00
	J. Van Santwood	5.00
	James F. E. Little	5.00
	Frederick W. Stoneback	5.00
	J. H. Charles	5.00
	V. Thompson	5.00
	W. T. Bliss	5.00
	Howard Wilson	5.00
	G. H. Fleming	5.00
	W. S. Quigley	5.00
	J. Lantz	5.00
	From friends	2.60
	Mrs. L. E. Hastings	1.20
	A. E. Barnes	1.00
	Amelia J. Burt	1.00
	W. A. Deering	5.00

APPENDIX B—Continued.

1891.		
June 10.	L. F. Golding	$5.00
	J. A. Hennessy	5.00
	R. H. Stoddard	5.00
	William R. Worrall	5.00
	H. W. Dourmett	5.05
	Betty Deming (a child)	10.00
	John Deming (a child)	10.00
	Anonymous	10.00
	Little Lights Society	5.00
	Mrs. Edmund T. Lukens	5.00
	W. S	5.00
	Cuttenden Hull, A	10.00
	Mrs. Clinton B. Fisk	10.00
	W. U. A	20.00
	Thomas Harrington	10.00
	E	10.00
June 18.	Mrs. Debbie H. Parker, Charlottesville, Ind	5.00
	Gen. E. E. Whittlesey, Washington, D. C	10.00
1892.		
Feb. 1.	Miss Mary Burroughs, Philadelphia, Pa	5.00
11.	A. D. Simpson, Christiansburg, Va	10.00
	Total	2,146.00

Of the above amount, $1,158 was collected through the Mail and Express, of New York.

APPENDIX C.—TENT LIFE IN SIBERIA.

By GEORGE KENNAN.

[Published by George P. Putnam's Sons. 1870. Page 116.]

Among the many superstitions of the Wandering Koraks and Chookchees one of the most noticeable is their reluctance to part with a living reindeer. You may purchase as many dead deer as you choose, up to 500, for about 70 cents apiece; but a living deer they will not give to you for love nor money. You may offer them what they consider a fortune in tobacco, copper kettles, beads, and scarlet cloth for a single live reindeer, but they will persistently refuse to sell him. Yet, if you will allow them to kill the very same animal you can have his carcass for one small string of common glass beads. It is useless to argue with them about this absurd superstition. You can get no reason for it or explanation of it, except that to sell a live reindeer would be "atkin" (bad). As it was very necessary in the construction of our proposed telegraph line to have trained reindeer of our own we offered every conceivable inducement to the Koraks to part with one single deer; but all our efforts were in vain. They could sell us 100 dead deer for 100 pounds of tobacco, but 500 pounds would not tempt them to part with a single animal as long as the breath of life was in his body. During the two years and a half which we spent in Siberia no one of our parties, so far as I know, ever succeeded in buying from the Koraks or Chookchees a single living reindeer.

APPENDIX D.—DOMESTICATED REINDEER IN ALASKA.

[House Report No. 1033, Fifty-second Congress, first session.]

Mr. Alexander, from the Committee on Agriculture, submitted the following report:

The Committee on Agriculture, to whom was referred the bill (H. R. 7764) to secure the introduction of domesticated reindeer into Alaska, report the same with a favorable recommendation. This bill does not properly come within the jurisdiction of the Committee on Agriculture, but should have been considered by the Committee on Appropriations. At the suggestion of the chairman of the Committee on Appropriations the Committee on Agriculture, having heard the testimony of the missionaries from Alaska, the Commissioner of Education, and others in regard to the merits of the bill, have considered it and recommend its passage.

The testimony showed that there are no reindeer in Alaska; that Alaska could support many times enough reindeer to furnish the inhabitants with food and clothing,

and that the reindeer skins are indispensable for clothing; that the whale and walrus, the principal supply of food, have been destroyed to such an extent as to cause much suffering for food; that dogs are used for transportation, and in many places the supply of food is becoming so scarce that the natives are compelled to eat their dogs, thus depriving them of the means of hauling their supplies; that for the development of the country the domesticated reindeer is absolutely indispensable; that the domesticated reindeer can make a speed of 19 miles an hour, and that a fair average rate of speed is 12 miles per hour; and this means of transportation is necessary to develop the gold fields of the interior, which can only be worked from two to two and one-half months a year; that the reindeer would be distributed at the Government schools, the native youths taught to herd and raise them, the increase to be given to worthy students and native teachers for services rendered; that this will induce the natives to become herders, be self-supporting, and not a charge upon the Government; that the natives have no vessels that can transport the live reindeer from Siberia to Alaska; that the vessels from San Francisco to Alaska leave the 1st of May to the 1st of June, none later than the last date mentioned, and that if anything be done this year, it is absolutely necessary to get the appropriation in time to send the goods for the purchase of the reindeer by the revenue cutter that leaves San Francisco the 1st of June.

The description given by the missionaries and others of the country, the habits of the natives, etc., was interesting. The distress caused by the continued failure of the food supply shows plainly that the natives will not be able to sustain themselves and will become a charge upon the Government. For these and other reasons the Committee on Agriculture urge the passage of this bill.

APPENDIX E.—MR. W. T. LOPP'S RECONNOISSANCE ALONG THE COAST NORTH OF BERING STRAITS.

CAPE PRINCE OF WALES, ALASKA,
January 20, 1892.

DEAR SIR: According to your instructions, I have made two expeditions up the coast north of here, and submit you the following report:

In November employed Eskimo, dogs, and sled and explored west shore of Louge Inlet or Lake, just north of Cape Prince of Wales, up to its head, where Grouse River empties into it. The mountains (see chart inclosed) were sloping and rolling, not sharp and rocky, and covered with moss. Portions of these hills were covered with 3 to 5 inches of snow, but all the exposed portions were free from any snow. This inlet is about 30 miles long and has two outlets to the sea. Along the banks of Grouse River are acres of bushes (3 to 6 feet), hundreds of ptarmigan, and nice sized fish in the river.

On December 27 started with boy, dogs, and sled for Ke-gik-tok. Had fine weather—short days—visited about 300 people. Some settlements had plenty of oil, seal meat, and fish, and others had little or none. All were very anxious to have deer introduced. Most of them seem to doubt that ownership would ever pass into their hands. They complain that they have to pay exorbitant prices to Cape Prince of Wales chiefs for deerskins. They reported moss very plentiful. At that time there was so little snow that it would be unnecessary to graze deer on the mountain side. I could see that the smooth expanse of country from coast to mountain was covered with only 3 or 4 inches of soft snow, no crusts or ice. (Unlike last winter, there have been no thaws this winter, consequently no ice crust on snow.) These coast people live on seal meat, oil, fish, ptarmigan, and squirrel. They are not a trading people, have had little or no intercourse with ships; are honest, industrious, and healthy.

Found a very prosperous settlement at Ke-gik-tok of 80 people. Asked me to bring the school up there, etc.

I think several hundred deer could be grazed along the hills from Cape Prince of Wales to Ke-gik-tok. I am satisfied from what I have seen and heard that there are hundreds of acres of good grazing land extending from the coast back to rivers flowing into lakes back of Port Clarence and those flowing into Kotzebue Sound. Settlements are so distributed along the coast from Cape Prince of Wales to Kotzebue Sound that deer men along the mountains could easily be supplied with seal oil and meat. And if inclosures are ever necessary there are plenty of bushes in small rivers to make them. I think these coast people are better situated and adapted for herding than any other Alaskan people.

They are all superstitious and are great cowards after dark. Perhaps it will be necessary to have them stand watch at night in pairs until they become accustomed

to the darkness. (One Eskimo never goes any place after dark if he can help it. He sees ghosts; but is all right with a companion.)

Hoping and trusting that we may sometime have occasion to make use of knowledge obtained on these two little expeditions, I am,

Very truly yours,

W. T. LOPP.

Dr. SHELDON JACKSON, *Washington, D. C.*

APPENDIX F.—RECONNOISSANCE NORTH OF PORT CLARENCE BY BRUCE GIBSON.

REINDEER STATION, PORT CLARENCE, ALASKA,
August 2, 1892.

SIR: I respectfully submit herewith report of expedition made by Mr. Gibson into interior, north of station, for the purpose of ascertaining probable condition of grazing for reindeer during winter months—copied from his notes as follows:

"I started on expedition July 27, leaving station at 12 o'clock noon; taking with me as guide Charley, as expert on pasturage Chief Herder Pungen, and five natives to pack tent and supplies. Traveled in a northwesterly direction, and for about 4 miles found good feed and several small lakes. I then changed my course to north for about three-quarters of a mile and found scarcely any feed, it being very rocky and barren; I then went west again for 7 miles and camped at a river about 30 feet wide. The first quarter of a mile of this last course was very rocky, bowlders from 4 to 6 feet through being plentiful, the remainder of the distance being good feeding grounds.

"The next day started north and traveled in that direction for about 9 miles and found good pasturage on east side most of the way, and wild flowers and berries grew in places; the west side of river is barren and very perpendicular in several places. I then traveled to west, and for a short distance on a small river found some feed, but after traveling for 1 mile I retraced my steps and went to northeast for about 3 miles, when men began to complain of being tired and I ordered a halt for the night on a small stream running toward the east. To northeast I saw good indications of feed.

"The next morning I got an early start, taking with me the guide and herder and leaving the others behind to try and find a place to camp that night, having to go without fire the previous night and this morning. I crossed the small river and traveled north. For the first 2 miles there was but a small quantity of feed, having passed over some very rocky ground. The next 3½ miles there is good pasturage, being plenty of grass and considerable moss. I crossed two small streams in this course. Traveled east to get around some large hills; at about one-half mile came to a large mound of slaty rock—mound about 30 feet high and 150 feet across. For 1 mile east found good pasture; crossed a small stream running southeast; changed to north and for 1 mile found good grazing ground; halted at a large cluster of rock for lunch and shelter from rain; found a white surface on one of the rocks, and I made the following inscription:

"'B. Gibson, July 29, 1892, 12 m., from Reindeer station.' Resumed march to north and for 2 miles found good pasturage; crossed a small stream running to south. About 1 mile south is a lake. Changed course to east for 3 miles; crossed one stream and found good feed in abundance. The land was of a rocky nature. Started to return to camp and traveled southwest for 7 miles to where I gave orders for camp to be located, but found they had gone farther east. I crossed over good feeding ground of a boggy nature, similar to that surrounding station. The herder said it was the best seen since starting on expedition; it was mostly lowland and some low rock hills. I found the camp 2 miles east of where I expected it to be.

"The fourth day I started east and traveled for 4 miles over low hills, the surface being of a broken nature and containing abundance of feed; coming to high hills, changed course to southeast for 2½ miles, finding fair pasturage and ground slightly rocky. Sent packers on to river to find suitable camping grounds for night. I traveled 5 miles to northeast, finding good pasturage of a boggy nature; crossed one small stream. Changed to southeast 1 mile and south 1 mile, finding good pasturage on low hills; changed to southwest over low, hilly, and rocky land, in some places slightly boggy; the feed on this last course was abundant and of a good quality.

"*Fifth day.*—It stormed hard last night and blew the tent down about 3 o'clock. I broke camp about 7 o'clock and started for the station, taking a southwest course. After traveling for about 5 miles I crossed a small stream running very rapidly toward the northeast. The land was low hills and furnished abundance of feed. I traveled 2 miles farther in the same direction and crossed a large stream with swift current and running northeast; the feed and land the same as passed earlier

in the day. Continuing in same direction, but a little more to west for 4 miles, I traveled over low hills; good pasturage and plenty of moss. I crossed large hill to north of station; found it barren and very high and rocky. It is about 1 mile from bottom of hill to open land, and from there on to station is good grazing land. I arrived at station at 4.15 in the afternoon. It had stormed hard from the time I left until my return, raining and blowing hard.

"In closing, I will say the herder told me the ground passed over was very good and equaled and in places excelled the pasturage in Siberia. He further stated that the pasturage surrounding station was sufficient for a year, providing that in the winter there was not over 1 foot of snow nor over 1½ inches of icy crust on top. If the ice comes first and the snow later, it is impossible for the deer to dig out the feed.

"I noticed in my travels that the feed was on low hills and lowlands, the high hills being barren.

"The guide, Charley, said that for a long distance into the interior the lowlands were the same as passed over, thus showing that, should it be necessary to go to the interior this winter, there will surely be plenty of feed for the reindeer."

Very respectfully,

MINER W. BRUCE, *Teacher.*

Rev. SHELDON JACKSON,
General Agent of Education in Alaska.

APPENDIX G.—RECONNOISSANCE EAST OF PORT CLARENCE, BY MINER W. BRUCE.

REINDEER STATION, PORT CLARENCE, ALASKA,
August 19, 1892.

SIR: In your letter of instructions for the government of this station, dated July 4, ultimo, you suggest, among other things, that two expeditions be sent out for the purpose of ascertaining the prospects for winter grazing for the reindeer should the country in this immediate vicinity become covered with ice or deep snow, thus preventing the deer from pawing through it for food.

One route designated by you was to the north for the station, in the direction of Kotzebue Sound; and in accordance with your instructions Mr. Gibson, on the 27th ultimo, made a trip in that direction, lasting four days and a half, the result of which I communicated to you officially on the 2d day of the present month.

On the 3d instant I started on a trip to the northeast with an oomeak and seven natives, expecting, if my health permitted, to be gone ten days or two weeks.

Our route lay through Grantley Harbor into Imnrock Lake, and having a fair wind we made a splendid day's sail, taking us about halfway through the lake, and camping the first night on the west side.

I wish especially to call your attention to the route from Grantley Harbor into Imnrock Lake, as it affords, in the event of severe storms, unusual shelter for the deer.

A narrow passage, probably 6 miles in length, connects these two beautiful bodies of water, and as it winds its zigzag course along the line of bluffs on each side, which commence immediately on leaving Grantley Harbor, is unbroken until Imnrock Lake is reached. The passage seems to be of nearly an uniform width, and will not exceed, at its widest part, one-quarter of a mile. The bluffs on both sides are about 200 feet high, and there appears to be water sufficient to float an ocean vessel.

At several places along the route I left the oomeak, and with the Siberian herder went to the top of the bluff and found the country to the north a gently undulating table-land, and with my glasses I could see that for several miles this character of country did not seem to change.

On the south side the same aspect of country appeared, but 4 or 5 miles to the south the country became more broken, and took in what appeared to be low mountains.

The whole surface of the country on both sides was covered with a luxuriant growth of low bushes, occasional patches of grass, having the appearance of blue joint, and what was certainly red-top grass and mosses.

Even on this table-land the surface of the country was very uneven, being in places hummocky, and the little spots between seemed to be marshy and often filled with water.

The Siberian herder seemed much pleased with the character of the feed, and frequently pointed out the different kinds of grasses or shrubbery that the deer were fond of, and always designated the moss as choice winter grazing.

From the natives in my party I learned that the snow in this passage does not reach a depth of over 1 foot, and usually less; also, that when one side of the passage is covered with snow, the other is lightly covered. If this be true, it would appear that the deer, if it becomes necessary to move them from the station, can find good grazing either one side or the other of the passage; and in severe storms a refuge may be had behind the high walls of the bluffs.

On the morning following our first day's sail I took the herder to the top of the hill just back of our camp. It is probably 400 or 500 feet high and runs out to a point into Imuruk Lake. From its top a splendid view of the country in every direction is had. The general contour, as far as I could see, was the same as that observed from the bluffs along the narrow passage. My position commanded a view to the northwest, north, and northeast, and for a distance of 25 miles at least the same character of country prevailed. As far as the eye could reach not a mountain was visible and not a speck of snow was seen.

To the west there were several miles of what appeared to be a marsh, or a very low land, covered with little patches of water back from the lake. These gradually disappeared in the north, where the land became higher and of the same general character I found farther to the south.

From my position I could see the faint outline of the north end of the lake, probably 12 or 15 miles away, and I thought I could discern the winding course of a river coursing through the table-lands to the north, and if so, it was probably the Agee-ee-puk River.

On the sides and top of the hill from which I was making my observations there was a thick growth of the same kind of grasses and shrubbery found the day before. I was surprised to find along the route to the top of the hill patches of low willow and elder bushes, from the branches of which twittered and flitted small birds, and every few paces we advanced aroused ptarmigan in large numbers.

There was nothing in the appearance of the country, so far as I could see, that would suggest anything like what one would expect to find bordering on the Arctic circle. On the contrary, the vegetation, much of it, was such as is found in temperate climates, and the birds and insects of the same variety that abound in country where the mercury never ranges lower than zero.

From my position on the top of the hill I could see what appeared to be a break in the range of mountains on the south side of the lake, and as the wind was blowing from the north, thus preventing farther advance in the present state of the weather, I concluded to sail to the other side and investigate the country in that direction.

The distance across was about 4 miles, but the wind died out when about halfway across, and we were compelled to paddle the rest of the way, a very slow process of travel in an oomeak.

On reaching shore we went into camp, and after dinner I started with the natives for the mountains. My purpose was to simply get an idea of the country between the shore of the lake and the foot of the mountains that day, and take all of the next for determining the extent of the pass.

All the afternoon we traversed the lowlands toward the mountains and found the same general growth of vegetation as that found before. It could not well be of thicker growth or to all appearances more nutritious. If anything there was more moss, and perhaps the low bushes hung fuller with blueberries than any found before. There were several small mountain streams leading across to the lake, and if they were supplied from melting snow it was far up or hidden between narrow gorges, as none were seen from where we traveled.

It was after 6 o'clock when we returned to camp, and before retiring the natives understood that on the morrow we were going to try to find a passage into the interior.

Accordingly by 7 o'clock we were ready to begin our tramp. We took with us an ax, spade, field glass, and two hard-tack apiece. Our course lay across the lowlands toward what appeared to be a break in the mountains, and it was at least 7 miles from camp across to the entrance. Part of the distance lay over comparatively smooth land, and a considerable portion over hummocky ground. There did not appear to be any difference in the thickness of the vegetation or the variety in these two different surfaces, but the rough ground was the most tedious I have ever attempted to travel over. The little ridges or hummocks are too wide to step over and too shaky to stand upon, so that our trip over this section was a series of ups and downs, mostly the latter.

At our stops for rest I had holes dug with the spade and was surprised to find a black, sandy soil, from 1 foot to 3 feet deep, in nearly every instance. Sometimes we could not dig more than a few inches on account of encountering stone or slabs of rock, but this was not the rule. I thought I discovered the secret of such a heavy and luxuriant vegetation here from the rich class of the soil and the abundance of water.

In our way toward the break we passed through two groves of elder and willow trees that were dense, of from 2 to 4 inches in diameter near the butt and from 10 to 15 feet high. It was evident that a little grubbing and thinning out would have improved the size of these trees materially.

Our journey up the side of the mountain near what appeared to be a pass was a tedious one, for the nature of the ground was more or less hummocky. I find that this class of land is as liable to occur on high or table land as upon low and marshy ground.

It became apparent as we ascended the mountain that the break or pass which appeared to extend through the range was a false one, and when near the top it appeared to be a sort of blow-out, which came to an abrupt perpendicular at the end of a sudden break ahead. From the top of the mountain we had ascended, although not the highest by considerable, we could see that the country to the south was a succession of mountains of perhaps 2,000 or 3,000 feet high, and that there was no pass into the interior unless following the course of some river.

Accordingly, we commenced our descent about 2 o'clock, and varied our course somewhat. It took us farther to the east along the base of the mountains and then straight to camp.

On our way back we passed over a section of country that was a complete bed of moss. We could rake it up in armfulls, and in a few minutes, during a spell of rest, we gathered sufficient to feed, as our Siberian herder declared, our whole herd of about 150 head of deer for one day.

If his estimate was correct, I feel assured that in this particular section a half-dozen men with hand rakes and pitchforks could, in one week, gather enough to feed our herd the coming winter.

At different times during the day, as had occurred during the day before, the Siberian herder gave me to understand that a trip in search of winter grazing was a useless expenditure of time; that what might appear to be good feeding ground now when winter set in might be covered with a thick crust of ice or deep snow; that nothing could be told from the lay of the land whether feed could be gotten at by the deer or not; that a locality which was all that could be desired this winter would be totally inaccessible next; that it was the practice on the Siberian side to select what appeared to be a good section for winter grazing, and if it became covered with thick ice or deep snow, to move the deer to some locality where feed could be had.

This was the same information Mr. Gibson had gathered from our chief Siberian herder, whom he had with him, and I partly resolved, if the wind was not favorable for moving north the following morning, to retrace my steps and return to the station.

I had left rather against my judgment, for my work of late had told on me and I needed rest. On my return to camp that evening I was completely worn out, and during the night experienced a slight chill.

The morning broke rainy, and I was feeling miserably. The judgment of the Siberian that it was a useless trip was a strong argument in my present condition, and when, an hour later, a strong north wind settled the matter of progress toward the north against us, at least for that day, but was a fair wind for the station, I ordered everything packed, and, after about fourteen hours' sail, reached the station.

As we must in a considerable measure depend upon the judgment of the four Siberian herders, who have spent all their lives in the rearing and care of reindeer, it seems to me that in the present state of affairs at the station, with so much to do and so little time before cold weather will set in, when the presence of myself and Mr. Gibson is required, further exploration in search of winter feed ought to be abandoned, or at least postponed until later in the fall.

From this view of the matter, I would respectfully ask a modification of your instructions upon this point.

I have the honor to be, very respectfully,

MINER W. BRUCE, *Teacher.*

Rev. SHELDON JACKSON,
General Agent of Education in Alaska, Washington, D. C.

APPENDIX H.—INSTRUCTIONS FOR GUIDANCE OF REINDEER STATION.

ON BOARD U. S. REVENUE MARINE STEAMER BEAR,
At anchor off Port Clarence, July 4, 1892.

SIR: During the months of August and September, 1891, I purchased in Siberia and landed (September 21) at Unalaska 16 domestic reindeer. Having no herder to take charge of them, I turned them loose on the small island of Amatignak, where they successfully wintered.

The landing this morning at this station from the U. S. Revenue Marine steamer *Bear* (Capt. Michael A. Healy, commander) of a band of 53 domesticated reindeer from South Head, Siberia, together with four herders, marks the establishment of the first herd of the kind in Alaska.

This is an event of far more than ordinary importance. If successful, it will create throughout northern and central Alaska a new food supply in place of the whale, the walrus, and the fur-bearing animals that are yearly becoming scarcer and more difficult to obtain.

Furnished a better and surer food supply, the native population, now decreasing in numbers, may reasonably be expected to increase.

Changing them from mere hunters to herdsmen, it will be the first upward step in their civilization.

With the increase in civilization of the natives and the general introduction of domestic reindeer, the vast, bleak, frigid, and now comparatively useless plains of Arctic Alaska will be reclaimed and become a source of wealth and prosperity to the land.

The realization of this desirable condition of things is largely in your hands. The friends of the movement and the National Government, which has been asked to extend it, will be encouraged to go forward or led to withdraw from further effort as the herd now intrusted to your care prospers or comes to naught.

With so much at stake, you will make the care and welfare of the herd your first and most constant care. Everything else is of secondary importance.

Winter grazing.—The most trying season will be next winter, when the food that now abounds everywhere will be largely covered up with snow and ice. In Siberia I am informed that the winter grazing is sometimes from 100 to 150 miles away from the summer grounds, the herd being driven back and forth spring and fall.

It is essential, then, that you take early steps to find a good location for winter. To this end I would advise that as soon as your house is inclosed you take Charley and the most experienced of the Siberian herders and make a thorough exploration of the surrounding country. I would make one trip through Grantly Harbor, Yokshook River, Imuruk Lake, to the headwaters of Agee-ee-puk and Cov-vee-arak rivers; also, on the trail from Grantly Harbor toward Unala Kleet and St. Michael. I would also advise a trip into and through the mountains north of the station. Charley will be a good guide, and perhaps the Siberian will know by the lay and general appearance of the land the most suitable place to winter.

I feel great solicitude with regard to this. A mistake may result in the loss of our herd by starvation. The natives around Port Clarence affirm that, while there is not much snow on the plains between the hills and the sea, yet it is covered with a hard, icy crust which the deer can not break through for food. They further say that, years ago, when the wild reindeer frequented the coast, they were only found in summer—that in winter they migrated toward Norton Sound.

It may prove that the winter grazing grounds that shall be selected may be too far away; that it will become necessary to close up for the winter the present house and establish temporary headquarters in the vicinity of the deer. If this necessity arises, I would suggest that you build a log house (if in a timber country) or a dug-out for winter use.

Protection from dogs.—Another danger to the herd arises from the attacks of strange dogs. You will therefore require one of the herders on watch to be armed, and instruct him to shoot down any dog attacking the herd and report the same to you for settlement. When a dog is thus killed you will send for the owner, explain to him the necessity for the step, express your regret at his loss, and then make suitable payment for the dog.

When any visiting natives come into your neighborhood have them notified at once that they must keep their dogs tied up. Deal firmly, justly, kindly, and patiently with the natives, and thus secure their good will.

Once a month you will count the herd, and if any are missing or have been killed note it down, with cause (if known), and report same with all the circumstances to the Bureau of Education.

If any exigency arises by which it becomes necessary to kill a deer for food, you will first use any surplus among the geldings, and after that from among the bulls. None are to be killed, however, except in cases of extreme necessity.

Herders.—The herders consist of two classes:

1. Experienced men from Siberia.
2. Native Alaskans who may wish to learn the management and care of reindeer.

The Siberians, being away from their friends and among a strange, selfish, and at times jealous and suspicious people, need your special care and protection. Take pains to make them feel that you have a fatherly interest in them. I hope their treatment will be such that they will choose to remain with us permanently.

The second class should be picked young men (one or two from a settlement), who are expected to take a two-years training in the care of the herd, and thus become fitted

to take charge of future herds in the neighborhood of their own homes. At the close of their two-years course, if they have been faithful to their duties and mastered the business, it is proposed to give them the deer as their start in life. This class will need constant watching. Anyone persistently refusing to obey necessary rules, shirking his duties on watch, or otherwise showing a want of interest in this work, or anyone that proves too dull to learn, is to be dismissed from the service and sent away from the station.

The second class are to be subdivided into classes corresponding with the number in the first class.

For instance, if you should have twelve in the second class, and, as now, four in the first class, you will place three of the second class under the tuition and oversight of each of the four of the first class; and whenever he goes on watch they shall accompany him and be subject to his direction. It will then, as a general rule, be necessary for only one of the Siberians to be with the herd at a time. In case of sickness of one of the Siberians his pupils will be assigned duty with the others until the sick one recovers and returns to duty.

After conference with the Siberians you will be able to systematize the hours of watch. In this I would defer largely to the method pursued in Siberia.

When the seasons of watch are determined upon you will see that each watch promptly relieves the preceding one at the proper time.

The herders of both classes are to be housed, clothed, fed, and cared for at the expense of the station.

Shelter.—At the home station, when off duty, have the herders construct comfortable dugouts for their own use. If you can spare the large dugout already commenced, that can be turned over to the herders.

If it becomes necessary to have the herd a great distance off, buy some walrus hides for a covering, and let the herders make a small tent that can be moved from place to place.

You will make an inspection of the dugouts every Saturday, and require them to be kept as cleanly as possible. Allow no slops or offal to be thrown upon the ground near the door.

Supplies.—You will furnish them with the necessary iron teakettles and pots for cooking. They are expected to procure driftwood for fuel. You will also furnish them a sufficiency of reindeer skins for bedding. These supplies are Government property, and are to be carried upon the inventory list.

Clothing.—You will supply them with comfortable native fur clothing, according to the season.

If the supplies I leave with you for this year are not sufficient, you will employ some of the native women to make more. As the reindeer clothing can be purchased ready made in Siberia cheaper than made in Alaska, you will make out at each season a list of garments needed and respectfully request the commanding officer of the revenue cutter to have them purchased for you. For this you will furnish him sufficient barter from the reindeer trade goods.

Once a month you will inventory all bedding, clothing, cooking utensils, and other Government property used by the herders.

Twice a month, if the weather is suitable, all bedding should be hung out to air and sun upon a line erected for the purpose.

Herders of the second class need special watching that they do not give or sell their clothes, bedding, or other Government property to their friends.

Food.—Flour, corn meal, pilot bread, beans, and tea will be sent from San Francisco. It is best, however, as far as possible, to preserve their native diet. You will therefore purchase supplies of oil, dried and fresh fish, etc.

As soon as you can determine it fix upon a regular ration, which you can issue daily or at regular intervals as experience shall show to be best.

Outsiders or friends are not to be allowed to gather in and eat with the herders. Nor shall the herders be allowed to give them food. If any food is to be given away it must be done by the superintendent or his assistant, and an account kept of the same, giving date, approximate amount, and number of recipients. You will encourage the herders when off duty to trap for rabbits and foxes both for fur and food.

When any garment, bedding, skin, or other property (except food) is issued to a herder or his wife, charge it against him in a book kept for the purpose. This will be a check against wastefulness, prevent anyone receiving more or less than his share, and enable us to keep an account of the expense of training each individual.

Wives.—If any of the herders shall be married and have their wives with them, you can issue a ration and clothing also to the wife, requiring from her in return some sewing or cooking for the herders. If there are several women you can apportion the work among them.

School.—If circumstances will permit, you will gather the herders that are off duty, and such others as may wish to attend, into the schoolroom for two or three hours daily (except Saturday and Sunday) and drill them in elementary reading, arith-

SAMUEL JOHNSEN KEMI, WIFE, AND BABE, TELLER REINDEER STATION, ALASKA.

metic, and writing. Special emphasis will be given, both in and out of school, to the use of the English language.

Fuel.—As far as possible you will procure and use driftwood for fuel at the station. The coal is to be reserved for keeping a fire through the night and for seasons when you may be unable to secure driftwood.

Morals.—It is scarcely necessary to write that you will allow no liquor, gambling, profanity, or immorality at the station or among the herders.

You will allow no barter or unnecessary work at the station on Sunday.

You or your assistant must always be at the station. Both of you must not be absent at the same time. If the station is temporarily removed to the winter grazing grounds then that for the time being becomes headquarters.

Reports.—1. You will keep a log book or brief daily journal of events at the station, extending from July 1 of each year to the following June 30. This book is to be mailed to the Bureau of Education.

2. You will keep in a book furnished you an itemized statement of all the barter for supplies for the station, giving date of transaction, name and quantity of article purchased, and articles and quantities of each given in exchange. A copy of this statement will be annually forwarded to the United States Bureau of Education.

3. On the last day of March, June, September, and December of each year you will make out an inventory of all stores and public property in your possession, including bedding and cooking utensils in use by the herders. This does not include the clothing issued to and in use by the herders.

A copy of these reports will be forwarded by the annual mail to the United States Bureau of Education.

4. On the last day of June each year you will make out and mail to the United States Bureau of Education an annual report of operations at the station. In this report you will embody any recommendations that your experience may suggest for the benefit of the station.

5. On the 1st of August each year you will make a requisition for supplies for the following year.

As the work is new and untried, much must necessarily be left to your discretion and good judgment.

Wishing you great success, I remain

Yours truly,

SHELDON JACKSON, *General Agent.*

Mr. MINER W. BRUCE,

Superintendent of Reindeer Station, Port Clarence, Alaska.

APPENDIX J.—DOMESTIC REINDEER IN LAPLAND.

[From Du Chaillu's Land of the Midnight Sun, vol. 2, pp. 167 and 168.]

The Fjeld Lapp's time is engaged in adding to his herd, to which he and his family devote all their energies, for their welfare depends on the growth of the animals. It is difficult to ascertain exactly the increase or decrease of reindeer according to the districts, for the people often change, and there has been of late years in the north a large immigration of Norwegian Lapps to the territory of Sweden, especially to Keresuando, but, taken as a whole, the population and the reindeer are increasing. There is a greater number in Norway than in Sweden, owing to the number of stationary bönder (farmer) and sea Lapps, which far outnumber the nomads.

According to the late census there are in Sweden (1870) 6,702 Laplanders, with 220,800 reindeer; in Norway (1865), 17,178 Laplanders, with 101,768 reindeer; in Finland (1865), 615 Laplanders, with 40,200 reindeer; in Russia (1859), 2,207 Laplanders, with 4,200 reindeer.

With those that belong to farmers and others I think we may safely say that the reindeer number about 400,000. The Samoïdes have the largest and finest breeds which are not numbered among those of the Lapps. In Kautokeino there are Lapps who own 2,000 reindeer; in Sorsele, in Sweden, one is said to own 5,000, and others 1,000 and 2,000. Some of the forest Lapps have 1,000. In Lulea Lappmark there are herds of over 2,000; in Finmarken, of 5,000; and some Lapps have owned as many as 10,000. A herd of 2,000 to 2,500 is said to give about 200 to 250 calves yearly.

Every owner has his own mark branded upon the ears of all his reindeers, and no other person has a right to have the same, as this is the lawful proof of ownership; otherwise, when several herds are mingled on the mountains, the separation would be impossible. According to custom no one can make a new mark but must buy that of an extinct herd; if these are scarce the price paid to the families that own them is often high; the name of the purchaser and each mark have to be recorded in court, like those of any other owner and property. The tax paid is according to the pasture land occupied.

and that the reindeer skins are indispensable for clothing; that the whale and walrus, the principal supply of food, have been destroyed to such an extent as to cause much suffering for food; that dogs are used for transportation, and in many places the supply of food is becoming so scarce that the natives are compelled to eat their dogs, thus depriving them of the means of hauling their supplies; that for the development of the country the domesticated reindeer is absolutely indispensable; that the domesticated reindeer can make a speed of 19 miles an hour, and that a fair average rate of speed is 12 miles per hour; and this means of transportation is necessary to develop the gold fields of the interior, which can only be worked from two to two and one-half months a year; that the reindeer would be distributed at the Government schools, the native youths taught to herd and raise them, the increase to be given to worthy students and native teachers for services rendered; that this will induce the natives to become herders, be self-supporting, and not a charge upon the Government; that the natives have no vessels that can transport the live reindeer from Siberia to Alaska; that the vessels from San Francisco to Alaska leave the 1st of May to the 1st of June, none later than the last date mentioned, and that if anything be done this year, it is absolutely necessary to get the appropriation in time to send the goods for the purchase of the reindeer by the revenue cutter that leaves San Francisco the 1st of June.

The description given by the missionaries and others of the country, the habits of the natives, etc., was interesting. The distress caused by the continued failure of the food supply shows plainly that the natives will not be able to sustain themselves and will become a charge upon the Government. For these and other reasons the Committee on Agriculture urge the passage of this bill.

APPENDIX E.—MR. W. T. LOPP'S RECONNOISSANCE ALONG THE COAST NORTH OF BERING STRAITS.

CAPE PRINCE OF WALES, ALASKA,
January 20, 1892.

DEAR SIR: According to your instructions, I have made two expeditions up the coast north of here, and submit you the following report:

In November employed Eskimo, dogs, and sled and explored west shore of Louge Inlet or Lake, just north of Cape Prince of Wales, up to its head, where Grouse River empties into it. The mountains (see chart inclosed) were sloping and rolling, not sharp and rocky, and covered with moss. Portions of these hills were covered with 3 to 5 inches of snow, but all the exposed portions were free from any snow. This inlet is about 30 miles long and has two outlets to the sea. Along the banks of Grouse River are acres of bushes (3 to 6 feet), hundreds of ptarmigan, and nice sized fish in the river.

On December 27 started with boy, dogs, and sled for Ke-gik-tok. Had fine weather—short days—visited about 300 people. Some settlements had plenty of oil, seal meat, and fish, and others had little or none. All were very anxious to have deer introduced. Most of them seem to doubt that ownership would ever pass into their hands. They complain that they have to pay exorbitant prices to Cape Prince of Wales chiefs for deerskins. They reported moss very plentiful. At that time there was so little snow that it would be unnecessary to graze deer on the mountain side. I could see that the smooth expanse of country from coast to mountain was covered with only 3 or 4 inches of soft snow, no crusts or ice. (Unlike last winter, there have been no thaws this winter, consequently no ice crust on snow.) These coast people live on seal meat, oil, fish, ptarmigan, and squirrel. They are not a trading people, have had little or no intercourse with ships; are honest, industrious, and healthy.

Found a very prosperous settlement at Ke-gik-tok of 80 people. Asked me to bring the school up there, etc.

I think several hundred deer could be grazed along the hills from Cape Prince of Wales to Ke-gik-tok. I am satisfied from what I have seen and heard that there are hundreds of acres of good grazing land extending from the coast back to rivers flowing into lakes back of Port Clarence and those flowing into Kotzebue Sound. Settlements are so distributed along the coast from Cape Prince of Wales to Kotzebue Sound that deer men along the mountains could easily be supplied with seal oil and meat. And if inclosures are ever necessary there are plenty of bushes in small rivers to make them. I think these coast people are better situated and adapted for herding than any other Alaskan people.

They are all superstitious and are great cowards after dark. Perhaps it will be necessary to have them stand watch at night in pairs until they become accustomed

to the darkness. (One Eskimo never goes any place after dark if he can help it. He sees ghosts; but is all right with a companion.)

Hoping and trusting that we may sometime have occasion to make use of knowledge obtained on these two little expeditions, I am,

Very truly yours,

W. T. LOPP.

Dr. SHELDON JACKSON, *Washington, D. C.*

APPENDIX F.—RECONNOISSANCE NORTH OF PORT CLARENCE BY BRUCE GIBSON.

REINDEER STATION, PORT CLARENCE, ALASKA,
August 2, 1892.

SIR: I respectfully submit herewith report of expedition made by Mr. Gibson into interior, north of station, for the purpose of ascertaining probable condition of grazing for reindeer during winter months—copied from his notes as follows:

"I started on expedition July 27, leaving station at 12 o'clock noon; taking with me as guide Charley, as expert on pasturage Chief Herder Pungen, and five natives to pack tent and supplies. Traveled in a northwesterly direction, and for about 4 miles found good feed and several small lakes. I then changed my course to north for about three-quarters of a mile and found scarcely any feed, it being very rocky and barren; I then went west again for 7 miles and camped at a river about 30 feet wide. The first quarter of a mile of this last course was very rocky, bowlders from 4 to 6 feet through being plentiful, the remainder of the distance being good feeding grounds.

"The next day started north and traveled in that direction for about 9 miles and found good pasturage on east side most of the way, and wild flowers and berries grew in places; the west side of river is barren and very perpendicular in several places. I then traveled to west, and for a short distance on a small river found some feed, but after traveling for 1 mile I retraced my steps and went to northeast for about 3 miles, when men began to complain of being tired and I ordered a halt for the night on a small stream running toward the east. To northeast I saw good indications of feed.

"The next morning I got an early start, taking with me the guide and herder and leaving the others behind to try and find a place to camp that night, having to go without fire the previous night and this morning. I crossed the small river and traveled north. For the first 2 miles there was but a small quantity of feed, having passed over some very rocky ground. The next 3¼ miles there is good pasturage, being plenty of grass and considerable moss. I crossed two small streams in this course. Traveled east to get around some large hills; at about one-half mile came to a large mound of slaty rock—mound about 30 feet high and 150 feet across. For 1 mile east found good pasture; crossed a small stream running southeast; changed to north and for 1 mile found good grazing ground; halted at a large cluster of rock for lunch and shelter from rain; found a white surface on one of the rocks, and I made the following inscription:

"'B. Gibson, July 29, 1892, 12 m., from Reindeer station.' Resumed march to north and for 2 miles found good pasturage; crossed a small stream running to south. About 1 mile south is a lake. Changed course to east for 3 miles; crossed one stream and found good feed in abundance. The land was of a rocky nature. Started to return to camp and traveled southwest for 7 miles to where I gave orders for camp to be located, but found they had gone farther east. I crossed over good feeding ground of a boggy nature, similar to that surrounding station. The herder said it was the best seen since starting on expedition; it was mostly lowland and some low rock hills. I found the camp 2 miles east of where I expected it to be.

"The fourth day I started east and traveled for 4 miles over low hills, the surface being of a broken nature and containing abundance of feed; coming to high hills, changed course to southeast for 2½ miles, finding fair pasturage and ground slightly rocky. Sent packers on to river to find suitable camping grounds for night. I traveled 5 miles to northeast, finding good pasturage of a boggy nature; crossed one small stream. Changed to southeast 1 mile and south 1 mile, finding good pasturage on low hills; changed to southwest over low, hilly, and rocky land, in some places slightly boggy; the feed on this last course was abundant and of a good quality.

"*Fifth day.*—It stormed hard last night and blew the tent down about 3 o'clock. I broke camp about 7 o'clock and started for the station, taking a southwest course. After traveling for about 5 miles I crossed a small stream running very rapidly toward the northeast. The land was low hills and furnished abundance of feed. I traveled 2 miles farther in the same direction and crossed a large stream with swift current and running northeast; the feed and land the same as passed earlier

in the day. Continuing in same direction, but a little more to west for 4 miles, I traveled over low hills; good pasturage and plenty of moss. I crossed large hill to north of station; found it barren and very high and rocky. It is about 1 mile from bottom of hill to open land, and from there on to station is good grazing land. I arrived at station at 4.15 in the afternoon. It had stormed hard from the time I left until my return, raining and blowing hard.

"In closing, I will say the herder told me the ground passed over was very good and equaled and in places excelled the pasturage in Siberia. He further stated that the pasturage surrounding station was sufficient for a year, providing that in the winter there was not over 1 foot of snow nor over 1½ inches of icy crust on top. If the ice comes first and the snow later, it is impossible for the deer to dig out the feed.

"I noticed in my travels that the feed was on low hills and lowlands, the high hills being barren.

"The guide, Charley, said that for a long distance into the interior the lowlands were the same as passed over, thus showing that, should it be necessary to go to the interior this winter, there will surely be plenty of feed for the reindeer."

Very respectfully,

MINER W. BRUCE, *Teacher.*

Rev. SHELDON JACKSON,
General Agent of Education in Alaska.

APPENDIX G.—RECONNOISSANCE EAST OF PORT CLARENCE, BY MINER W. BRUCE.

REINDEER STATION, PORT CLARENCE, ALASKA,
August 19, 1892.

SIR: In your letter of instructions for the government of this station, dated July 4, ultimo, you suggest, among other things, that two expeditions be sent out for the purpose of ascertaining the prospects for winter grazing for the reindeer should the country in this immediate vicinity become covered with ice or deep snow, thus preventing the deer from pawing through it for food.

One route designated by you was to the north for the station, in the direction of Kotzebue Sound; and in accordance with your instructions Mr. Gibson, on the 27th ultimo, made a trip in that direction, lasting four days and a half, the result of which I communicated to you officially on the 2d day of the present month.

On the 3d instant I started on a trip to the northeast with an oomeak and seven natives, expecting, if my health permitted, to be gone ten days or two weeks.

Our route lay through Grantley Harbor into Imnrock Lake, and having a fair wind we made a splendid day's sail, taking us about halfway through the lake, and camping the first night on the west side.

I wish especially to call your attention to the route from Grantley Harbor into Imnrock Lake, as it affords, in the event of severe storms, unusual shelter for the deer.

A narrow passage, probably 6 miles in length, connects these two beautiful bodies of water, and as it winds its zigzag course along the line of bluffs on each side, which commence immediately on leaving Grantley Harbor, is unbroken until Imnrock Lake is reached. The passage seems to be of nearly an uniform width, and will not exceed, at its widest part, one-quarter of a mile. The bluffs on both sides are about 200 feet high, and there appears to be water sufficient to float an ocean vessel.

At several places along the route I left the oomeak, and with the Siberian herder went to the top of the bluff and found the country to the north a gently undulating table-land, and with my glasses I could see that for several miles this character of country did not seem to change.

On the south side the same aspect of country appeared, but 4 or 5 miles to the south the country became more broken, and took in what appeared to be low mountains.

The whole surface of the country on both sides was covered with a luxuriant growth of low bushes, occasional patches of grass, having the appearance of blue joint, and what was certainly red-top grass and mosses.

Even on this table-land the surface of the country was very uneven, being in places hummocky, and the little spots between seemed to be marshy and often filled with water.

The Siberian herder seemed much pleased with the character of the feed, and frequently pointed out the different kinds of grasses or shrubbery that the deer were fond of, and always designated the moss as choice winter grazing.

From the natives in my party I learned that the snow in this passage does not reach a depth of over 1 foot, and usually less; also, that when one side of the passage is covered with snow, the other is lightly covered. If this be true, it would appear that the deer, if it becomes necessary to move them from the station, can find good grazing either one side or the other of the passage; and in severe storms a refuge may be had behind the high walls of the bluffs.

On the morning following our first day's sail I took the herder to the top of the hill just back of our camp. It is probably 400 or 500 feet high and runs out to a point into Imuruk Lake. From its top a splendid view of the country in every direction is had. The general contour, as far as I could see, was the same as that observed from the bluffs along the narrow passage. My position commanded a view to the northwest, north, and northeast, and for a distance of 25 miles at least the same character of country prevailed. As far as the eye could reach not a mountain was visible and not a speck of snow was seen.

To the west there were several miles of what appeared to be a marsh, or a very low land, covered with little patches of water back from the lake. These gradually disappeared in the north, where the land became higher and of the same general character I found farther to the south.

From my position I could see the faint outline of the north end of the lake, probably 12 or 15 miles away, and I thought I could discern the winding course of a river coursing through the table-lands to the north, and if so, it was probably the Agee-ee-puk River.

On the sides and top of the hill from which I was making my observations there was a thick growth of the same kind of grasses and shrubbery found the day before. I was surprised to find along the route to the top of the hill patches of low willow and elder bushes, from the branches of which twittered and flitted small birds, and every few paces we advanced aroused ptarmigan in large numbers.

There was nothing in the appearance of the country, so far as I could see, that would suggest anything like what one would expect to find bordering on the Arctic circle. On the contrary, the vegetation, much of it, was such as is found in temperate climates, and the birds and insects of the same variety that abound in country where the mercury never ranges lower than zero.

From my position on the top of the hill I could see what appeared to be a break in the range of mountains on the south side of the lake, and as the wind was blowing from the north, thus preventing farther advance in the present state of the weather, I concluded to sail to the other side and investigate the country in that direction.

The distance across was about 4 miles, but the wind died out when about halfway across, and we were compelled to paddle the rest of the way, a very slow process of travel in an oomeak.

On reaching shore we went into camp, and after dinner I started with the natives for the mountains. My purpose was to simply get an idea of the country between the shore of the lake and the foot of the mountains that day, and take all of the next for determining the extent of the pass.

All the afternoon we traversed the lowlands toward the mountains and found the same general growth of vegetation as that found before. It could not well be of thicker growth or to all appearances more nutritious. If anything there was more moss, and perhaps the low bushes hung fuller with blueberries than any found before. There were several small mountain streams leading across to the lake, and if they were supplied from melting snow it was far up or hidden between narrow gorges, as none were seen from where we traveled.

It was after 6 o'clock when we returned to camp, and before retiring the natives understood that on the morrow we were going to try to find a passage into the interior.

Accordingly by 7 o'clock we were ready to begin our tramp. We took with us an ax, spade, field glass, and two hard-tack apiece. Our course lay across the lowlands toward what appeared to be a break in the mountains, and it was at least 7 miles from camp across to the entrance. Part of the distance lay over comparatively smooth land, and a considerable portion over hummocky ground. There did not appear to be any difference in the thickness of the vegetation or the variety in these two different surfaces, but the rough ground was the most tedious I have ever attempted to travel over. The little ridges or hummocks are too wide to step over and too shaky to stand upon, so that our trip over this section was a series of ups and downs, mostly the latter.

At our stops for rest I had holes dug with the spade and was surprised to find a black, sandy soil, from 1 foot to 3 feet deep, in nearly every instance. Sometimes we could not dig more than a few inches on account of encountering stone or slabs of rock, but this was not the rule. I thought I discovered the secret of such a heavy and luxuriant vegetation here from the rich class of the soil and the abundance of water.

In our way toward the break we passed through two groves of elder and willow trees that were dense, of from 2 to 4 inches in diameter near the butt and from 10 to 15 feet high. It was evident that a little grubbing and thinning out would have improved the size of these trees materially.

Our journey up the side of the mountain near what appeared to be a pass was a tedious one, for the nature of the ground was more or less hummocky. I find that this class of land is as liable to occur on high or table land as upon low and marshy ground.

It became apparent as we ascended the mountain that the break or pass which appeared to extend through the range was a false one, and when near the top it appeared to be a sort of blow-out, which came to an abrupt perpendicular at the end of a sudden break ahead. From the top of the mountain we had ascended, although not the highest by considerable, we could see that the country to the south was a succession of mountains of perhaps 2,000 or 3,000 feet high, and that there was no pass into the interior unless following the course of some river.

Accordingly, we commenced our descent about 2 o'clock, and varied our course somewhat. It took us farther to the east along the base of the mountains and then straight to camp.

On our way back we passed over a section of country that was a complete bed of moss. We could rake it up in armfulls, and in a few minutes, during a spell of rest, we gathered sufficient to feed, as our Siberian herder declared, our whole herd of about 150 head of deer for one day.

If his estimate was correct, I feel assured that in this particular section a half-dozen men with hand rakes and pitchforks could, in one week, gather enough to feed our herd the coming winter.

At different times during the day, as had occurred during the day before, the Siberian herder gave me to understand that a trip in search of winter grazing was a useless expenditure of time; that what might appear to be good feeding ground now when winter set in might be covered with a thick crust of ice or deep snow; that nothing could be told from the lay of the land whether feed could be gotten at by the deer or not; that a locality which was all that could be desired this winter would be totally inaccessible next; that it was the practice on the Siberian side to select what appeared to be a good section for winter grazing, and if it became covered with thick ice or deep snow, to move the deer to some locality where feed could be had.

This was the same information Mr. Gibson had gathered from our chief Siberian herder, whom he had with him, and I partly resolved, if the wind was not favorable for moving north the following morning, to retrace my steps and return to the station.

I had left rather against my judgment, for my work of late had told on me and I needed rest. On my return to camp that evening I was completely worn out, and during the night experienced a slight chill.

The morning broke rainy, and I was feeling miserably. The judgment of the Siberian that it was a useless trip was a strong argument in my present condition, and when, an hour later, a strong north wind settled the matter of progress toward the north against us, at least for that day, but was a fair wind for the station, I ordered everything packed, and, after about fourteen hours' sail, reached the station.

As we must in a considerable measure depend upon the judgment of the four Siberian herders, who have spent all their lives in the rearing and care of reindeer, it seems to me that in the present state of affairs at the station, with so much to do and so little time before cold weather will set in, when the presence of myself and Mr. Gibson is required, further exploration in search of winter feed ought to be abandoned, or at least postponed until later in the fall.

From this view of the matter, I would respectfully ask a modification of your instructions upon this point.

I have the honor to be, very respectfully,

MINER W. BRUCE, *Teacher.*

Rev. SHELDON JACKSON,
General Agent of Education in Alaska, Washington, D. C.

APPENDIX H.—INSTRUCTIONS FOR GUIDANCE OF REINDEER STATION.

ON BOARD U. S. REVENUE MARINE STEAMER BEAR,
At anchor off Port Clarence, July 4, 1892.

SIR: During the months of August and September, 1891, I purchased in Siberia and landed (September 21) at Unalaska 16 domestic reindeer. Having no herder to take charge of them, I turned them loose on the small island of Amatignak, where they successfully wintered.

The landing this morning at this station from the U. S. Revenue Marine steamer *Bear* (Capt. Michael A. Healy, commander) of a band of 53 domesticated reindeer from South Head, Siberia, together with four herders, marks the establishment of the first herd of the kind in Alaska.

This is an event of far more than ordinary importance. If successful, it will create throughout northern and central Alaska a new food supply in place of the whale, the walrus, and the fur-bearing animals that are yearly becoming scarcer and more difficult to obtain.

Furnished a better and surer food supply, the native population, now decreasing in numbers, may reasonably be expected to increase.

Changing them from mere hunters to herdsmen, it will be the first upward step in their civilization.

With the increase in civilization of the natives and the general introduction of domestic reindeer, the vast, bleak, frigid, and now comparatively useless plains of Arctic Alaska will be reclaimed and become a source of wealth and prosperity to the land.

The realization of this desirable condition of things is largely in your hands. The friends of the movement and the National Government, which has been asked to extend it, will be encouraged to go forward or led to withdraw from further effort as the herd now intrusted to your care prospers or comes to naught.

With so much at stake, you will make the care and welfare of the herd your first and most constant care. Everything else is of secondary importance.

Winter grazing.—The most trying season will be next winter, when the food that now abounds everywhere will be largely covered up with snow and ice. In Siberia I am informed that the winter grazing is sometimes from 100 to 150 miles away from the summer grounds, the herd being driven back and forth spring and fall.

It is essential, then, that you take early steps to find a good location for winter. To this end I would advise that as soon as your house is inclosed you take Charley and the most experienced of the Siberian herders and make a thorough exploration of the surrounding country. I would make one trip through Grantly Harbor, Yokshook River, Imuruk Lake, to the headwaters of Agee-ee-puk and Cov-vee-arak rivers; also, on the trail from Grantly Harbor toward Unala Kleet and St. Michael. I would also advise a trip into and through the mountains north of the station. Charley will be a good guide, and perhaps the Siberian will know by the lay and general appearance of the land the most suitable place to winter.

I feel great solicitude with regard to this. A mistake may result in the loss of our herd by starvation. The natives around Port Clarence affirm that, while there is not much snow on the plains between the hills and the sea, yet it is covered with a hard, icy crust which the deer can not break through for food. They further say that, years ago, when the wild reindeer frequented the coast, they were only found in summer—that in winter they migrated toward Norton Sound.

It may prove that the winter grazing grounds that shall be selected may be too far away; that it will become necessary to close up for the winter the present house and establish temporary headquarters in the vicinity of the deer. If this necessity arises, I would suggest that you build a log house (if in a timber country) or a dug-out for winter use.

Protection from dogs.—Another danger to the herd arises from the attacks of strange dogs. You will therefore require one of the herders on watch to be armed, and instruct him to shoot down any dog attacking the herd and report the same to you for settlement. When a dog is thus killed you will send for the owner, explain to him the necessity for the step, express your regret at his loss, and then make suitable payment for the dog.

When any visiting natives come into your neighborhood have them notified at once that they must keep their dogs tied up. Deal firmly, justly, kindly, and patiently with the natives, and thus secure their good will.

Once a month you will count the herd, and if any are missing or have been killed note it down, with cause (if known), and report same with all the circumstances to the Bureau of Education.

If any exigency arises by which it becomes necessary to kill a deer for food, you will first use any surplus among the geldings, and after that from among the bulls. None are to be killed, however, except in cases of extreme necessity.

Herders.—The herders consist of two classes:

1. Experienced men from Siberia.
2. Native Alaskans who may wish to learn the management and care of reindeer.

The Siberians, being away from their friends and among a strange, selfish, and at times jealous and suspicious people, need your special care and protection. Take pains to make them feel that you have a fatherly interest in them. I hope their treatment will be such that they will choose to remain with us permanently.

The second class should be picked young men (one or two from a settlement), who are expected to take a two-years training in the care of the herd, and thus become fitted

to take charge of future herds in the neighborhood of their own homes. At the close of their two-years course, if they have been faithful to their duties and mastered the business, it is proposed to give them the deer as their start in life. This class will need constant watching. Anyone persistently refusing to obey necessary rules, shirking his duties on watch, or otherwise showing a want of interest in this work, or anyone that proves too dull to learn, is to be dismissed from the service and sent away from the station.

The second class are to be subdivided into classes corresponding with the number in the first class.

For instance, if you should have twelve in the second class, and, as now, four in the first class, you will place three of the second class under the tuition and oversight of each of the four of the first class; and whenever he goes on watch they shall accompany him and be subject to his direction. It will then, as a general rule, be necessary for only one of the Siberians to be with the herd at a time. In case of sickness of one of the Siberians his pupils will be assigned duty with the others until the sick one recovers and returns to duty.

After conference with the Siberians you will be able to systematize the hours of watch. In this I would defer largely to the method pursued in Siberia.

When the seasons of watch are determined upon you will see that each watch promptly relieves the preceding one at the proper time.

The herders of both classes are to be housed, clothed, fed, and cared for at the expense of the station.

Shelter.—At the home station, when off duty, have the herders construct comfortable dugouts for their own use. If you can spare the large dugout already commenced, that can be turned over to the herders.

If it becomes necessary to have the herd a great distance off, buy some walrus hides for a covering, and let the herders make a small tent that can be moved from place to place.

You will make an inspection of the dugouts every Saturday, and require them to be kept as cleanly as possible. Allow no slops or offal to be thrown upon the ground near the door.

Supplies.—You will furnish them with the necessary iron teakettles and pots for cooking. They are expected to procure driftwood for fuel. You will also furnish them a sufficiency of reindeer skins for bedding. These supplies are Government property, and are to be carried upon the inventory list.

Clothing.—You will supply them with comfortable native fur clothing, according to the season.

If the supplies I leave with you for this year are not sufficient, you will employ some of the native women to make more. As the reindeer clothing can be purchased ready made in Siberia cheaper than made in Alaska, you will make out at each season a list of garments needed and respectfully request the commanding officer of the revenue cutter to have them purchased for you. For this you will furnish him sufficient barter from the reindeer trade goods.

Once a month you will inventory all bedding, clothing, cooking utensils, and other Government property used by the herders.

Twice a month, if the weather is suitable, all bedding should be hung out to air and sun upon a line erected for the purpose.

Herders of the second class need special watching that they do not give or sell their clothes, bedding, or other Government property to their friends.

Food.—Flour, corn meal, pilot bread, beans, and tea will be sent from San Francisco. It is best, however, as far as possible, to preserve their native diet. You will therefore purchase supplies of oil, dried and fresh fish, etc.

As soon as you can determine it fix upon a regular ration, which you can issue daily or at regular intervals as experience shall show to be best.

Outsiders or friends are not to be allowed to gather in and eat with the herders. Nor shall the herders be allowed to give them food. If any food is to be given away it must be done by the superintendent or his assistant, and an account kept of the same, giving date, approximate amount, and number of recipients. You will encourage the herders when off duty to trap for rabbits and foxes both for fur and food.

When any garment, bedding, skin, or other property (except food) is issued to a herder or his wife, charge it against him in a book kept for the purpose. This will be a check against wastefulness, prevent anyone receiving more or less than his share, and enable us to keep an account of the expense of training each individual.

Wives.—If any of the herders shall be married and have their wives with them, you can issue a ration and clothing also to the wife, requiring from her in return some sewing or cooking for the herders. If there are several women you can apportion the work among them.

School.—If circumstances will permit, you will gather the herders that are off duty, and such others as may wish to attend, into the schoolroom for two or three hours daily (except Saturday and Sunday) and drill them in elementary reading, arith-

SAMUEL JOHNSEN KEMI, WIFE, AND BABE, TELLER REINDEER STATION, ALASKA.

metic, and writing. Special emphasis will be given, both in and out of school, to the use of the English language.

Fuel.—As far as possible you will procure and use driftwood for fuel at the station. The coal is to be reserved for keeping a fire through the night and for seasons when you may be unable to secure driftwood.

Morals.—It is scarcely necessary to write that you will allow no liquor, gambling, profanity, or immorality at the station or among the herders.

You will allow no barter or unnecessary work at the station on Sunday.

You or your assistant must always be at the station. Both of you must not be absent at the same time. If the station is temporarily removed to the winter grazing grounds then that for the time being becomes headquarters.

Reports.—1. You will keep a log book or brief daily journal of events at the station, extending from July 1 of each year to the following June 30. This book is to be mailed to the Bureau of Education.

2. You will keep in a book furnished you an itemized statement of all the barter for supplies for the station, giving date of transaction, name and quantity of article purchased, and articles and quantities of each given in exchange. A copy of this statement will be annually forwarded to the United States Bureau of Education.

3. On the last day of March, June, September, and December of each year you will make out an inventory of all stores and public property in your possession, including bedding and cooking utensils in use by the herders. This does not include the clothing issued to and in use by the herders.

A copy of these reports will be forwarded by the annual mail to the United States Bureau of Education.

4. On the last day of June each year you will make out and mail to the United States Bureau of Education an annual report of operations at the station. In this report you will embody any recommendations that your experience may suggest for the benefit of the station.

5. On the 1st of August each year you will make a requisition for supplies for the following year.

As the work is new and untried, much must necessarily be left to your discretion and good judgment.

Wishing you great success, I remain

Yours truly,

SHELDON JACKSON, *General Agent.*

MR. MINER W. BRUCE,
Superintendent of Reindeer Station, Port Clarence, Alaska.

APPENDIX J.—DOMESTIC REINDEER IN LAPLAND.

[From Du Chaillu's Land of the Midnight Sun, vol. 2, pp. 167 and 168.]

The Fjeld Lapp's time is engaged in adding to his herd, to which he and his family devote all their energies, for their welfare depends on the growth of the animals. It is difficult to ascertain exactly the increase or decrease of reindeer according to the districts, for the people often change, and there has been of late years in the north a large immigration of Norwegian Lapps to the territory of Sweden, especially to Keresuando, but, taken as a whole, the population and the reindeer are increasing. There is a greater number in Norway than in Sweden, owing to the number of stationary bönder (farmer) and sea Lapps, which far outnumber the nomads.

According to the late census there are in Sweden (1870) 6,702 Laplanders, with 220,800 reindeer; in Norway (1865), 17,178 Laplanders, with 101,768 reindeer; in Finland (1865), 615 Laplanders, with 40,200 reindeer; in Russia (1859), 2,207 Laplanders, with 4,200 reindeer.

With those that belong to farmers and others I think we may safely say that the reindeer number about 400,000. The Samoïdes have the largest and finest breeds which are not numbered among those of the Lapps. In Kautokeino there are Lapps who own 2,000 reindeer; in Sorsele, in Sweden, one is said to own 5,000, and others 1,000 and 2,000. Some of the forest Lapps have 1,000. In Lulea Lappmark there are herds of over 2,000; in Finmarken, of 5,000; and some Lapps have owned as many as 10,000. A herd of 2,000 to 2,500 is said to give about 200 to 250 calves yearly.

Every owner has his own mark branded upon the ears of all his reindeers, and no other person has a right to have the same, as this is the lawful proof of ownership; otherwise, when several herds are mingled on the mountains, the separation would be impossible. According to custom no one can make a new mark but must buy that of an extinct herd; if these are scarce the price paid to the families that own them is often high; the name of the purchaser and each mark have to be recorded in court, like those of any other owner and property. The tax paid is according to the pasture land occupied.

APPENDIX K.

U. S. REVENUE STEAMER BEAR,
San Francisco, Cal., December 6, 1890.

DEAR SIR: Under orders from the Secretary of the Treasury, I have been ten years on the Bering Sea and Arctic Ocean station of the U. S. Revenue-Marine Service.

My duties have brought me very closely in contact with and greatly interested me in the native population.

On account of this interest, I have watched with pleasure the coming among them of the missionaries of the several churches and the teachers of the Government schools.

I have also seen with apprehension the gradual exhaustion of the native food supply.

From time immemorial they have lived principally on the whale, seal, walrus, salmon, and wild reindeer. But in the persistent hunt of white men for the whale and walrus, the latter has largely disappeared, and the former been driven beyond the reach of the natives. The white men are also erecting canneries on their best fishing stream, and the usual supply of fish is being cut off; and with the advent of improved firearms the wild reindeer are migrating farther and farther away.

With the disappearance of the whale, walrus, salmon, and reindeer, a very large portion of their food supply is taken away, and starvation and gradual extinction appear in the near future.

On my recent cruise I was accompanied by Dr. Sheldon Jackson, United States General Agent of Education, and together we have made the question of a future food supply the subject of special thought and investigation.

We have consulted with a few of the leading teachers, missionaries, traders, and whaling captains whom we have met, and they, without a single exception, agree with us that the most practical relief is the introduction of domesticated reindeer into that portion of northern and arctic Alaska adapted to them.

In Lapland there are 400,000 domesticated reindeer, sustaining a population of 27,000. In Siberia, but a few miles from Alaska, with climate and country of similar conditions, are tens of thousands of tame reindeer supporting thousands of people, and it will be a very easy and comparatively cheap matter to introduce the tame reindeer of Siberia into Alaska, and teach the natives the care and management of them.

This it is proposed to do in connection with the industrial schools established among the natives by the Bureau of Education. As in connection with the industrial schools in Dakota, Indian Territory, and elsewhere, the Indian boy is taught the raising of stock, so in the industrial schools of Alaska it is proposed to teach the Eskimo young men the raising of tame reindeer.

A few thousand dollars expended now in the establishment of this new industry will save hundreds of thousands hereafter. For if the time comes when the Government will be compelled to feed these Eskimo it will cost over $1,000,000.

In northern Alaska there are about 400,000 square miles that are adapted to the reindeer and are unfit for anything else.

This region has a present population of about 20,000, all of whom will be ultimately benefited by the new industry.

With an assured support, such as will come from herds of tame reindeer, there is no reason why the present population shall not be increased in numbers and advanced to the position of civilized, wealth-producing American citizens.

Asking for your favorable consideration and earnest advocacy of this matter,

I remain, very respectfully,

M. A. HEALY,
Captain, U. S. Revenue Marine.

Hon. W. T. HARRIS, LL. D.,
U. S. Commissioner of Education, Washington, D. C.

DESTITUTION AMONG THE ALASKA ESKIMO.

[An interview with Capt. M. A. Healy, U. S. Revenue-Marine Service, in San Francisco Chronicle December 12, 1890.]

For several seasons past the Eskimo of northwestern Alaska have experienced great hardships in obtaining a supply of deer meat for their winter stores. It is to be feared that when the *Bear* makes her annual visit to the Arctic next summer many of the villages will be found to have lost their residents from starvation. The latest advices from the Arctic report a failure not only in the autumn deer hunt, but in the entire catch of whales, walrus, and seals.

Naturally of a timid disposition the deer have learned that the natives with breech-loading arms are far more formidable foes than when bows, arrows, and spears were employed in the chase. Again, the Eskimo spare neither young nor old when a herd is found, and little suckling fawns, as well as does carrying young, fall victims to their guns.

Formerly on the lower Yukon around St. Michael, on Norton Sound, and in the country known as the Kotzebue Sound district, numbers of deer made yearly visits. Now it is rare to find that the natives living at these points have seen or tasted deer meat.

The Alaskan deer of the arctic and subarctic regions have been confounded with the reindeer of other localities, but while certainly belonging to the rangifer family, they are the true barren-ground caribou, differing from the upland caribou and domesticated reindeer of Lapland and Siberia in being smaller in body and horns. From July to September the instincts of the deer induce them to come from the interior to the seacoast to obtain rest and freedom from the tortures inflicted by the hordes of mosquitoes that infest the inland swamps, and also to get saline matter from the herbage and moss growing in proximity to the ocean. In September they commence their inland migration, and from July until the middle of October they are ruthlessly pursued by the natives. Some rest is afforded to the animals during the dark days that prevail in the Arctic zone from November until January, but as soon after the early part of February as the weather permits the food seekers again take the field. The does have their young during April, and by a provision of nature the horns of the female only attain size during the time she is suckling the fawn and until it reaches such an age that it can feed—about two months.

When it is considered that a deer weighing on an average 125 pounds is consumed at a single sitting by five or six natives it may be readily perceived that the average returns of a successful hunting party must be large to feed a village.

During the past season in the Arctic the attention of Captain Healy, of the United States revenue steamer *Bear*, has been directed in a very pointed manner to the attainment of some method whereby the supply of deer for food and clothing purposes may be increased in northwestern Alaska. This year, taking advantage of the presence on the *Bear* of Dr. Sheldon Jackson, United States Commissioner of Education for Alaska, the captain, in conjunction with Commissioner Jackson, intends to present to the Secretary of the Interior data upon the subject.

Within a radius of 100 miles inland from the shores of the ocean on the Siberian coast, from Cape Navarin to Plover Bay, there are a people known as deer men. They belong to the Chukchee tribe of Siberians, and are essentially a nomadic race, wandering from East Cape, on the northern coast, to Cape Navarin, southward. Accompanied by their herds of tame reindeer, aggregating in many instances thousands, they roam in search of food. These reindeer, while resembling the Alaskan species in the main, differ in the texture of their skins, the pelts being spotted brown and white, with a smooth surface. These deer men subsist mainly on the products of their herds, bartering the skins with the coast natives for tobacco, seal oil, walrus hides for their boot soles, and other minor commodities, such as powder, shot, lead, and flour. At Cape Navarin and East Cape, Siberia, they sometimes meet the whaling ships and sell them deer meat and skins for tobacco, etc.

Captain Healy's ideas are to propose to the Government that he be empowered to purchase a number of these deer of both sexes and transport them on the *Bear* to some point on the Alaskan coast where moss and feed are plentiful. These deer are to form the nucleus of a herd, and from the yearly increase they can be distributed over other portions of the Northwest Territory. As the Alaskan Eskimo are not skilled in herding the deer, Captain Healy intends, if permission be granted by the Government, to endeavor to enlist the services of some experienced Siberian natives to instruct them.

Unless some measures be adopted, as suggested by Captain Healy, it is sure that a decade will witness the extermination of the people of our arctic province on its northwest shores. The results of the active and unscrupulous chase of their pelagic food supplies by the whalemen have already become evident; walrus are almost invisible on the ice floes within reach of the native hunters, while the flurried and galled whale makes its passage to the unknown regions of the Arctic Ocean at a speed which defies the natives to capture it.

The proposition of Captain Healy will be communicated to the Washington authorities at an early date.

DESTRUCTION OF THE WHALES.

[From Bancroft's History of Alaska, pp. 668 and 669.]

Of whaling enterprise in the neighborhood of the Alaskan coast mention has already been made; but a few statements that will serve to explain the enormous decrease that has occurred in the catch within the last three decades may not be out of place.

Of the 600 or 700 American whalers that were fitted out for the season of 1857, at least one-half, including most of the larger vessels, were engaged in the North Pacific. The presence of so vast a fleet tended of course to exhaust the whaling grounds or to drive the fish into other waters, for there are no permanent whaling grounds on any portions of the globe except those encircled by ice for about ten months in the year. In the seas of Greenland, not many years ago, whales were rarely to be seen; in 1870 they were fairly plentiful. The Sea of Okhotsk and the waters in the neighborhood of the Aleutian Islands were a few decades ago favorite hunting grounds, but are now almost depleted, while in 1870 the coast of New Siberia was swarming with whales. Schools of sperm whale are occasionally seen between the Alaska Peninsula and Prince William Sound, and the humpback sometimes makes its appearance as far north as Baranof Island. Between Bristol Bay and Bering Strait a fair catch is sometimes taken, but most of the vessels forming what is termed the North Pacific whaling fleet now pass into the Arctic Ocean in quest of their prey. Probably not more than 8 or 10 of them are employed on the whaling grounds of the Alaskan coast.

In 1881 the whaling fleet of the North Pacific mustered only 30 and in the following year 40 craft, of which 4 were steamers. The catch for 1881 was one of the most profitable that has occurred since the date of the transfer, being valued at $1,139,000, or an average of about $57,000 for each vessel, some of them returning with cargoes worth $75,000, and few with cargoes worth less than $30,000. In 1883 the catch was inconsiderable, several of the whalers returning "clean" and few making a profit for their owners.

The threatened destruction of these fisheries is a matter that seems to deserve some attention. In 1850, as will be remembered, it was estimated that 300 whaling vessels visited Alaskan waters and the Okhotsk and Bering seas. Two years later the value of the catch of the North Pacific fleet was more than $14,000,000.

After 1852 it gradually decreased until in 1862 it was less than $800,000; for 1867 the amount was about $3,200,000; in 1881 it had again fallen to $1,139,000, and for the season of 1883 there was a still further reduction.

SAN FRANCISCO, *December 18, 1890.*

DEAR SIR: Referring to your desire to obtain information relative to the introduction of reindeer into the northwest portion of the Territory of Alaska, I would say that in my opinion the project is entirely feasible. My experience in Alaska permits me to state on authority that the next decade will witness the extinction of the American reindeer, or rather caribou. In 1881, when I first visited the district of Norton and Kotzebue sounds and the lower Yukon, deer were plentiful. This past winter (1889) not a single animal had been seen within a radius of 200 miles. Similar conditions are coexisting from Port Clarence to Point Barrow, and where in former years the hunters had to travel but 50 miles to reach the deer haunts, to-day they traverse twice that distance. These contingencies arise from three causes:

1. The indiscriminate slaughter of young and old animals.
2. The use at the present day of improved weapons of the chase in lieu of the primitive bows, arrows, and spears.
3. The conditions of wind prevailing at the seasons when the deer go to and from the coast. It must distinctly be understood that upon a supply of these animals our Alaskan Eskimo depend for clothing as well as their stores of meat should their pelagic sources of provender fail.

The proposition to introduce deer from the Siberian herds can be effected at a cost of but a few thousand dollars.

The location for the first experimental station should be on Choris Peninsula or the vicinity of Kotzebue Sound. This location has climatic similarities with Siberia. The food (moss) supply is abundant and herding easy.

As the results of this initial experiment become manifest, additional locations for herds can be established. Within two seasons the Chukchee herdsmen will be able to instruct the Eskimo in the style of herding.

I have made inquiries upon the subject, and now give you the result. Ten years ago the Russian steamer *Alexander* went to the Kamchatka Peninsula, and officers of the Alaska Commercial Company bought seven male and seven female deer, transporting them to Bering Island (one of the islands leased by the company from Russia). Captains Blair and Greenberg and Superintendent Lubegoil inform me that the herd now numbers 180. From this you can judge the rate of propagation.

The revenue steamer *Bear* can be utilized for transportation, and I know no man more capable of conducting the experiment than Captain Healy.

I hope that the small sum required will be voted by Congress, as unless something is done for these people their annihilation is only a question of a brief period.

The whalers have so frightened the big fish that the natives are unable to pursue them in their rapid passage, while the extermination of the walrus is almost a fact.

These remarks I present as requested.

Yours, very truly, HENRY D. WOOLFE.

Dr. SHELDON JACKSON,
Washington, D. C.

WILD REINDEER IN ALASKA.

[Charles H. Townsend in the report of the cruise of the U. S. Revenue Marine Steamer *Corwin*, 1885, Capt. M. A. Healy, commanding, pp. 87 and 88.]

Reindeer are found more or less regularly throughout Alaska. They were found by Mr. McLenegan on the Noätak, as well as by our party on the Kowak. Traders in the service of the Alaska Commercial Company told me of their common distribution over the Yukon, Kuskokwim, and Aleutian divisions of the country. They have even been shot on Unimak Island, at the end of the peninsula; but reindeer are restless animals, irregular in their migrations and habits. Sometimes they desert whole sections of the country for months together, and they appear to have withdrawn from many regions where firearms have been introduced. Notwithstanding the fact that large herds of reindeer are kept in a state of domestication by the Chukchees at East Cape and other well-known places on the Asiatic side of Bering Straits, with whom the natives of the Alaskan side communicate regularly, there appears to be no domestication of the species whatever in Alaska, nor indeed in any part of North America.

In time, when the general use of firearms by the natives of upper Alaska shall have reduced the numbers of this wary animal, the introduction of the tame variety, which is a substantial support to the people just across the straits, among our own thriftless, alcohol-bewitched Eskimos, would be a philanthropic movement, contributing more toward their amelioration than any system of schools or kindred charities. The native boats could never accomplish the importation, which would, however, present no difficulty to ordinary seagoing vessels. The taming of the American reindeer is impracticable, for domestication with this animal at least is the result of subjection through many generations. Something tending to render a wild people pastoral or agricultural ought to be the first step toward their advancement. In our management of these people, "purchased from the Russians," we have an opportunity to atone, in a measure, for a century of dishonorable treatment of the Indian.

REINDEER.

[From Encyclopedia Britannica, vol. 7, pp. 24 and 25.]

The reindeer (*Tarandus rangifer*), the only domesticated species of deer, has a range somewhat similar to the elk, extending over the entire boreal region of both hemispheres, from Greenland and Spitzbergen in the north to New Brunswick in the south. There are several well-marked varieties, differing greatly in size and in form of the antlers, the largest forms occurring farthest north, while by many writers the American reindeer, which has never been domesticated, is regarded as a distinct species. The antlers, which are long and branching, and considerably palmated, are present in both sexes, although in the female they are slender and less branched than the males. In the latter they appear at a much earlier age than in any other species of deer, and Darwin conjectures that in this circumstance a key to their exceptional appearance in the female may be found. The reindeer has long been domesticated in Scandinavia, and is of indispensable importance to the Lapland race, to whom it serves at once as a substitute for the horse, cow, sheep, and goat. As a beast of burden it is capable of drawing a weight of 300 pounds, while its fleetness and endurance are still more remarkable. Harnessed to a sledge, it will travel without difficulty 100 miles a day over the frozen snow, its broad and deeply cleft hoofs being admirably adapted for traveling over such a surface.

During summer the Lapland reindeer feeds chiefly on the young shoots of the willow and birch; and as at this season migration to the coast seems necessary to the well-being of the species, the Laplander, with his family and herds, sojourns for several months in the neighborhood of the sea. In winter its food consists chiefly of the reindeer moss and other lichens, which it makes use of its hoofs in seeking for beneath the snow. The wild reindeer grows to a much greater size than the tame breed, but

in Northern Europe the former are being gradually reduced through the natives entrapping and domesticating them. The tame breed found in Northern Asia is much larger than the Lapland form and is there used to ride on. There are two distinct varieties of the American reindeer, the barren-ground caribou and the woodland caribou. The former, which is larger and more widely distributed of the two, frequents in summer the shores of the Arctic Sea, retiring to the woods in autumn to feed on the tree and other lichens. The latter occupies a very limited tract of woodland country, and, unlike the barren-ground form, migrates southward in spring. The American reindeer travel in great herds, and, being both unsuspicious and curious, they fall ready victims to the bow and arrow or the cunning snare of the Indian, to whom their carcasses form the chief source of food, clothing, tents, and tools.

APPENDIX L.

Capt. M. A. Healy, in January, 1892, writing to Senator Charles N. Felton, says:

"The three great problems of existence of both natives and whites in the Territory of Alaska are food, clothing, and transportation. They are to be solved in a rigorous climate and rough and almost impenetrable country, and one in which nothing as yet is produced from the ground. The food supply must either be found in the flesh of the wild animals and birds of the country or brought from without. With the white population the food might be said to be brought wholly from without. The enormous expense this entails has kept this population down to the narrowest limit of employees of firms or companies capable of maintaining stations there and confined these stations to a few scattered well-known points along the immense stretch of seacoast or on some of the principal rivers, as the Yukon.

"*Food supply.*—The native population of the northwest part of the country depend for food upon whale, walrus, seal, fish, and what few wild animals, such as deer and caribou, they can kill. The whale and walrus have been so persistently pursued by white men that they have rapidly diminished and are now so scarce and shy that their capture by the natives is attended with great difficulty and uncertainty. This scarcity of their principal supply of food is greatly felt by the natives along the whole northwest coast and to such an extent that in the short space of winter whole villages have been wiped out.

"I have seen almost the entire population of St. Lawrence Island lying strewn about their huts dead from starvation. And this winter of 1891-92 the same fate may be that of Kings Island. Upon my visit there in September last, the seal and walrus catch having failed them, the natives were reduced to the direst extremities. Their larders were exhausted and their only means of subsistence their dogs and the kelp and carrion cast up by the tide. What supplies could be spared from the vessel and what bought at St. Michaels station were given the people with the hope that it would tide them over until more successful hunting. But this hope is not without misgiving that upon my return in the spring I shall find many of them whom I count as friends cold in death. The interior natives are dependent wholly upon caribou and deer and what fish come into their streams during the short summer. Caribou and deer are rapidly diminishing there, as they have in other countries, and the fishing streams are being taken up by white men, so that the lines of existence are on all sides being drawn tighter and tighter about these poor native Alaskans.

"*Reindeer-skin clothing.*—Clothing of reindeer skin has been found the best and only kind to withstand the intense and continued cold of the country. These skins are now bartered at a high price from the natives of the Siberian coast, and are passed along the Siberian side from village to village, increasing in value the farther they go from the Bering Straits. The experience of white men and natives has been the same, and even in our summer visits to the country we on the vessel use reindeer clothing to keep from suffering.

"The methods of transportation now in use in Alaska are by dog trains and boats. By boat it is impossible to travel nine months in the year, and during the three months of summer when the streams are open they can be used only down stream. By dog trains transportation is limited, slow, and uncertain, and the greater part of the load is taken up with food for the animals. These dogs have been so closely bred that they are now degenerated in size, strength and sagacity. I have for years been requested by natives to bring them a larger breed to improve their dogs, and the Hudson Bay Company has imported the English mastiff for use in trains where the native dog is too slight.

"Among the whites the greatest difficulty experienced by miners, missionaries, explorers, and residents has been the want of a rapid and assured means of transportation. The history of every expedition that has penetrated into the country any distance from the coast has been one of suffering and oftentimes hunger from the difficulty of travel and packing. Horses, cattle, asses, and other beasts of

burden, excepting tame reindeer, are out of the question, because they can not live in the country, and it is impossible to provide food for them when snow covers the ground the larger part of the year. On account of this difficulty the country, except along the seacoast and a few of the navigable rivers, is as little known to-day as when it was first bought. And those great mineral deposits which Alaska is said to contain remain as yet undiscovered.

"*What the reindeer might do.*—To my mind the only satisfactory solution of all three of these problems, important as they are, is the introduction of tame reindeer into the country. In proper numbers they will transform the native population from a fishing to a pastoral people, and prove to them a never-failing supply of food. The hides of the animals already furnish almost the only clothing used, but at a greatly exaggerated cost. And to the white explorers, miners, missionaries, and settlers the reindeer will prove a means of transportation and packing that will enable them to learn and develop the resources of a vast country.

"The natives of Siberia have for centuries herded and reared the tame reindeer, and thus been safe against periodical periods of starvation when the whale and walrus fail them. They are a strong, swift, and hardy animal, tractable and easily broken to harness and packing, and especially adapted, or, in fact, made for the country and climate. In travel they are self-sustaining. The supply of moss upon which they feed covers the whole of northern Alaska, and instinct leads them to secure it in winter as well as summer by burrowing through the deepest snows. It is not necessary for us to speak of the value of such pack animals to the prospector. To the explorer they are equally valuable, and when supplies fail are equally valuable as food.

"If I may revert back to the days of the Western Union Telegraph expedition to that part of the country where reindeer could be procured for drafting as well as for food, the thousand and one obstacles that at first seemed insurmountable were, through the medium of these animals, easily overcome.

"The natives of Alaska quite see the advantage of such an animal in their midst, have expressed to me their eager wishes for them, and along the Yukon, the most thickly settled part of the country, the white people are enthusiastic over their introduction, for in them they see a solution of many of the difficulties of existence there.

"*The Siberians will sell.*—Some writers and others have claimed that the Siberian natives will not sell reindeer to white men, but Dr. Jackson and I have disproved this by buying during the past summer, at different points on the Siberian coast, sixteen of the animals, and securing promises to sell us as many as we could take care of the coming summer, should they be wanted. The sixteen we purchased, the first ones to be introduced into the Territory, we placed at Unalaska for propagation.

"I believe this is the most important question that bears upon the Territory of Alaska to-day, and a small sum donated by Congress for the purpose will in the end develop the country, its character and resources, and prove a great benefit to the commerce and wealth of the United States in general and the Pacific Coast in particular.

"I am not referring to the Alaska of the tourist—that narrow strip of island from the southernmost boundary to Sitka—but to that immense territory of 500,000 square miles of the north and west, of which the world has no knowledge and no conception, and to which the Alaska of the tourist bears as much relation as the State of Florida does to the whole United States."

APPLICATION FOR A TEAM OF REINDEER.

FORTY-MILE CREEK, *August 13, 1892.*

DEAR SIR: Captain Peterson informs me that you would bring some reindeer, bought by the Government, to distribute in Alaska. If you did get any, and send me a pair, or better, two cows and one bull, I will surely reward your trouble. I am doing freighting here in the winter with dogs, and reindeer would be far ahead of them. You could leave them in somebody's care in St. Michael for the winter and have them sent up here in the spring. I will pay for all the expenses. If you did not get any this year for the Government, and you have a chance to buy some for me, I wish you would do it, and I will pay for them, whatever it is.

Respectfully,

FRITZ KLOKE,
Forty-Mile Creek, Alaska.

APPENDIX M.—COMMERCIAL VALUE OF REINDEER.

[N. Width, importer and commission merchant of Scandinavian products, C3 Broadway, room 29 — Cable address, "Puncheon, New York."]

607 PENN MUTUAL BUILDING,
Philadelphia, Pa., April 16, 1892.

DR. SHELDON JACKSON,
Bureau of Education, Washington:

I received your favor of the 14th and a pamphlet, which I have read with great interest. If reindeer can be imported in Alaska from Siberia and if there exists abundance of reindeer moss in Alaska, the facilities for realizing the plan are rather great.

Besides the advantages mentioned in the pamphlet, there exists one to which want to call your attention—the great commercial importance.

To Sweden and Norway it is not only the Laplanders who live on reindeer smoked reindeer meat and smoked tongues are sold everywhere in the said countries and the hides are in great demand, tanned to a soft skin (used for gloves, military riding trousers, etc.).

There are merchants in Stockholm the only trade of whom is in Lapland products and the skins, dried with the hairs on, are exported by the thousands to Germany and England. I sold myself, 1878, about 5,000 such skins to a firm in Leipzig, Germany. The Norwegian Preserving Company use large quantities of reindeer meat for canning, and fresh it is considered a delicacy. Russia exports fresh reindeer meat, frozen, in carloads to Germany.

The price of smoked hams is in Sweden about 10 to 9 cents a pound; of smoked tongues, 8 to 10 cents apiece (or a pair, I can not exactly remember which); of dried hides, with hair on, $1.25 to $1.75 apiece, and more if they are not worm-bitten. The Swedish reindeer have mostly a kind of insect which lays its eggs in their skins; this causes holes, which are seen in the skin when tanned and diminish their value. The hairs are in great demand for the filling of life-saving apparatus (buoys, etc.), while they possess buoyancy in a wondrous degree. The best existing glue is made of reindeer horns. If I were sure of getting a trade in these articles and had the money I would not consider it a moment, but go to Alaska at the first opportunity and make a fortune in ten years.

The number of reindeer killed for the trade (besides what the Laplanders use for themselves) is yearly 12,000 to 15,000 in Norway, probably 6,000 to 7,000; besides Sweden imports large quantities of meat and skins from Finland.

In 1881 I visited the fair in Nizhnee-Novgorod, Russia, and became there acquainted with a merchant from Nuhangel, who had brought to the fair 5,000 pair smoked tongues and 6,000 tanned skins (the tanned skins have a value of $2 to $3 apiece). A Swedish dragoon regiment wear trousers exclusively made of tanned reindeer skins (no other material permitted).

I think these facts might be of some interest. Captain Healy says in his letter: "If the Government will be compelled to feed the Eskimo it will cost over $1,000,000. If the Government realize the plan of domesticating reindeer, it would probably bring a good yearly income to the United States.

Yours, respectfully, N. WIDTH.

I should be very much pleased to learn later on how far the project succeeds and what steps the Government will take. If I move to Puget Sound next fall I shall probably make a trip to Alaska.

PHILADELPHIA, PA., *December 31, 1892.*

DEAR SIR: Your favor of the 29th received, and in answer beg to say, that I wrote to a friend in Norway about a book or pamphlet, as desired; I think, however, it would be easier to get such book from England, as probably some English tourist or other has written about the Laplanders, who always have been an object of great interest to tourists traveling in Norway.

The acclimatization of reindeer in Alaska would most certainly considerably increase the revenues from this province, as soon as some thousand deer could be yearly slaughtered and the hides and meat brought into the market. I believe I have written to you hereabout on a previous occasion; the tanned skins (soft and with a beautiful yellow color) would no doubt find a ready sale; in Sweden they are paid with seven to ten kr. ($2 to $2.75) and used for military pantaloons, gloves, bed-pillows, etc., and the hair, owing to its great buoyant quality, is much used for life-saving material. Russia sends frozen reindeer meat by carloads to Germany.

If I had capital, and if the climate in Alaska were not too severe, I would like very much to start such trade, in which I have some experience.

There is also another animal which would suit admirably for Alaska—the so-called "Thibetian ox," "yak," also "grunting ox" (probably while grunting as a hog). The animal has feet as a goat, well fitted for climbing rocks and stones; the cow gives an excellent milk, which gives an excellent butter (the reindeer has not this merit); is used in Thibet also very much for transporting purposes. This ox, which is to the natives in Thibet what the reindeer is to Laplanders, is admirably qualified to sustain cold, seems even to love the cold, and to thrive best in cold and rough weather; it loves to throw itself in frozen lakes and rivers, to lie in snow and shady places, is always lying in the open air, has to seek its food for itself, only the herders have to take care to bring it down in the winter in the lower regions where the snow melts and the food is accessible.

In Thibet these animals are completely left to themselves; if taken some care of they might multiply quicker and be much improved. They are seen in the zoological gardens in Europe, probably also in this country; might be shipped from Bombay or Calcutta, I presume. This animal might become by and by as abundant in Alaska as formerly were the buffalo on the Western prairies, and make Alaska a visiting place for sportsmen.

With my compliments for the New Year, I remain, dear sir, yours, respectfully,

N. WIDTH.

Rev. SHELDON JACKSON,
Washington, D. C.

P. S.—As a proof of what man can do with a good will and good sense, even in the cold, inhospitable region, I wish to mention that in a place in Sweden, under 67° north latitude, where rich iron ores have been found and bought by an English company, a Swedish colonel and engineer in 1890 planted a grand park and garden, where all kinds of vegetables are growing, even rhubarb, asparagus, cauliflower, raspberries, strawberries, currants, large pine and birch trees. The park has an area of 2,800 to 3,000 square feet.

APPENDIX N.

THE CHAMBER OF COMMERCE OF SAN FRANCISCO,
San Francisco, January 20, 1891.

Resolved, That our delegation in Congress be requested to urge the passage of the joint resolution introduced December 19, 1890 (H. Res. 258), extending to Alaska the benefit of laws encouraging instruction in agriculture and the mechanic arts.

Adopted unanimously by the Chamber of Commerce of San Francisco this 20th day of January, A. D. 1891.

Attest:

[SEAL.] THOS. J. HAYNES, *Secretary.*

THE TRIBES, MISSIONS, AND SCHOOLS OF ALASKA.

So many inquiries have been made for general information with regard to Alaska, that it seems expedient to make a report which contains a general survey of the tribes, villages, missions and schools of this unique region.

Scattered over this vast North-land, in clusters of small settlements, is a population composed approximately of 15,000 Innuit, or Eskimo, 2,145 Aleuts, 1,756 Creoles, 5,100 Tinneh, 3,000 Thlingets, 788 Hydah, and 2,000 whites, making a total of 33,623.

THE INNUIT.

The Innuit occupy the entire coast line of Alaska, with the outlying islands along the Arctic coast to Bering Strait; thence southward to the Alaska Peninsula, over the peninsula and eastward and northward along the Pacific Coast to Mount St. Elias, with the exception of a small territory on Cook's Inlet and at the mouth of Copper River, where the Tinneh from the interior have forced their way to the coast. Occupying the coast line, they are bold navigators and skilled fishermen and sea hunters.

The term "Innuit" is the native word for "people," and is the name used by themselves, signifying "our people." The term "Eskimo" is one of reproach given them by their neighbors, meaning "raw-fish eaters." The Innuit of Alaska are a much finer race physically than their brethren of Greenland and Labrador. They are tall and muscular, many of them being 6 feet and over in height. They have small black

eyes, high cheek bones, large mouth, thick lips, coarse brown hair, and fresh yellow complexions. In many instances the men have full beards and mustaches. In some sections the men wear a labret under each corner of the mouth, in a hole cut through the lower lip for the purpose.

They are a good-natured people, always smiling when spoken to. They are fond of dancing, running, jumping, and all athletic sports. While they speak a common language from the Arctic to the Pacific, each locality has its own dialect.

The native dress is the parkas, made of the skins of animals and sometimes of the breasts of birds and skins of fishes. However, where they have access to the stores of traders the more progressive buy ready-made clothing.

Their residences have the outward appearance of a circular mound of earth covered with grass, with a small opening at the top for the escape of smoke. The entrance is a small and narrow hallway to the main room, which is from 12 to 20 feet in diameter, and is without light or ventilation. Those of the Kadiak district have one or two small bedrooms opening into the main room.

The diet consists of the meat of the moose, reindeer, bear, and smaller fur-bearing animals; also of fish, the white whale, the walrus, seal, and various waterfowl. In the northern section they have a great aversion to salt. While they will eat with great relish decayed fish or putrid oil, they will spit out with a wry face a mouthful of choice corned beef.

Men, women, and children are inveterate smokers.

While they travel continually in the summer, they have permanent winter homes.

Their religious belief is quite indefinite. In a general way they believe in a power that rewards the good and punishes the bad, by sending them to different places after death. They are barbarians, and, with the exception of those in southern Alaska, have not had civilizing, educational, or religious advantages.

From the boundary line to Bering Strait, along the bleak Arctic coast, villages are placed here and there, wherever there is a sheltered harbor with good hunting or fishing; the population of these aggregates 3,000.

At Point Barrow, the most northern portion of land on the continent, there is a village (Nuwuk) of 31 families and 150 people. They inhabit houses or tupecs that are built partly under ground for warmth. The upper portion is roofed over with dirt, supported by rafters of whale jaws and ribs. Eight or 10 miles south of Nuwuk is Oot-ke-ah-ve, with a population of 300 to 400.

This is one of the villages selected by the United States Bureau of Education for the establishment of a school, the contract for which was given to the Board of Home Missions of the Presbyterian Church for the Woman's Executive Committee of Home Missions. The money necessary for its establishment was generously contributed by Mrs. Elliott F. Shepard, of New York. The first teacher was Prof. L. M. Stevenson, of Versailles, Ohio, who reached the place on July 30, 1890.

In 1892 Mr. Stevenson was appointed by the Government keeper of the Refuge Station. This station is, next to Upernavik, Greenland, the northernmost mission in the world. Mr. Stevenson reports it very interesting to see their black eyes flash and their dusky countenances brighten as they learn a new word or a new combination of figures. They seem to pride themselves on knowing English, but manifest little desire to speak it, as that would be breaking off from their traditions, and their im-ut-koots (doctors) would let the evil one take full possession of them for thus abandoning the style of former days.

The attendance for the most part was very irregular, owing to the trips that had to be made out to the caches where the deer meat was stored, and which they brought in for food, as required, and for the catching of seals for both food and fuel.

After the age of 4 is reached, no parent is able to tell the age of his children, and they are not positively certain beyond 3 years, so that the classification by ages in school is mere guesswork. Knowledge of the past is summed up in the single word "i-pan-ee," which may be yesterday or ten thousand years ago, or any indefinite period.

Five seems to be the basis and almost the extent of their mathematical comprehension, and beyond the limit of 15 the best of them become confused, and cut off further count by a single word, "am-a-lok-tuk," which may be anything, from 1 upward. It seems to mean plenty. If there is enough for the present meal it is "am-a-lok-tuk."

The coldest weather reported was 42½° below zero. The long, dark (for the night extends from November 19 to January 23) Arctic winter wore away until April 14, when the report of "whales seen in the lead" set everyone wild with excitement, nearly breaking up the school. All the pupils large enough left immediately to hunt whales, and a few weeks later the remaining boys and girls left to drive the dog teams that were transporting the whalebone and meat to the village from the edge of the ice, from 12 to 20 miles out to sea.

At this village is also located the Government refuge station for shipwrecked whalers. Within the past ten years some 2,000 sailors have been wrecked on this

Arctic coast. So far they have been fortunate in finding vessels within reach to carry them south to civilization, but the occasion is liable to come any season when they will be compelled to winter here. To a large body of men this means slow starvation and death. They could not subsist on the country, and there is no adequate provision within 1,500 to 2,000 miles; and when the long Arctic winter sets in no power on earth could reach them with help. To provide against any such horrible tragedy Capt. M. A. Healy, U. S. R. M., saw the need of having an ample supply of provisions stored at some central place in the Arctic region. The plan grew and took shape in his own mind. He enlisted his friends and the men interested in the whaling industry, particularly in New Bedford and San Francisco, and finally, after many vexations delays that would have discouraged a less persistent man, Congress voted the money for erecting the buildings and procuring the provisions.

In 1889 Captain Healy brought up the materials and erected the main building, which is a low one-story structure, 30 by 48 feet in size. The walls, roof, and floor are made double, as a protection against the intense cold of this high northern latitude in winter. It will accommodate 50 men comfortably; it can shelter 100 if necessary. The house has provisions for 100 men twelve months, and is admirably adapted for its purpose.

Three hundred and ten miles south of Point Barrow, on the Arctic coast, is Point Hope, with a population of 300. At this village is a successful mission and school, conducted by Mr. John B. Driggs, M. D., under the auspices of the Protestant Episcopal Missionary Society. During the winter of 1890–91 the attendance at the school numbered 68.

The school was opened on the 1st of October, 1890. The day brought with it a blizzard and snowstorm that lasted for nine days. During the morning the teacher occupied the schoolroom alone, but as time wore on and no pupils came he put on his furs and started for the village to hunt up the children. Upon going outside the house he found a boy walking on the beach. Taking him into the schoolroom, he commenced school. At the close of the afternoon he presented his pupil with a couple of pancakes left from his own breakfast. The effect was equal to any reward of merit. That boy proved one of the most regular in attendance during the entire winter season. The next morning 4 presented themselves, and from that the school grew to 68. A mixture of flour, molasses, and water made into a sort of cake, a little of which was given to the pupils each evening, proved a very cheap and efficient method of securing regular attendance, and promoting discipline, as they had to be both present and perfect in their deportment and recitations to be entitled to cake. The scholars usually arrived from 6 to 7 in the morning and remained all day. The sun disappeared on the 10th of December and returned on the 3d of January, giving them a night of twenty-four days. Lamps were required in the schoolroom from November 12 to February 9. The thermometer varied in the coldest weather from 27° to 31° below zero, the average of the winter being probably about 15° below zero. During February and a portion of March a series of blizzards set in that were beyond description. The ice was solid across the ocean to Cape Prince of Wales, 200 miles distant. The effect of the gales was such that at times it seemed as if the schoolhouse must be blown away. Snow flew in perfect sheets. The schoolhouse was located 2 miles from the village, and yet, notwithstanding the storms and distance, the attendance was good. For a few days the teacher hired men to take the little ones safely home through the storm (the 2 miles distance), but soon found that the precaution was unnecessary; that they were accustomed to take care of themselves.

Two hundred and twenty miles south of Point Hope is situated the village of Cape Prince of Wales, on the American side of Bering Straits. It contains a population of 539 Eskimos. In 1890 the American Missionary Association (Congregational) established a station at this place, with Messrs. W. T. Lopp and H. R. Thornton teachers. School was opened on the 18th of August, 1890, with only about one-fourth of the population returned to the village from their summer's hunt.

The school being established among a wild people, who had known no restraints and who could not comprehend the purposes or language of the teachers in coming to them, at first, through misapprehension, there was a good deal of trouble. On the 19th of September Elignak, one of the wealthiest men of the village, and one of his wives, both in a state of beastly intoxication, tried to force their way into the house. On the 23d of September some of the students became so boisterous and unruly in the schoolroom that they also had to be excluded from the house. And again, in November, drunken parties tried to break in and make a disturbance, so that for two months the teachers taught, ate, worked, and slept with loaded arms at hand, not knowing at what moment they might have to defend the property committed to them, and their lives. They were constantly harrassed with questions as to when resistance should begin and how far it would be justifiable, debating in their own minds whether it would be better to allow themselves to be robbed or murdered without resistance, or through resistance make the savages respect their manhood.

The danger to the station was greatly increased by an epidemic of the grip, which carried away 26 people in two months. This was by the superstitions of the people attributed to the presence of the white men among them. However, through tact and good management and the providence of God, hostilities were prevented, and by January the strained situation was greatly relieved. Mutual confidence sprang up between the natives and the teachers. Having heard, before going to the place, of the bad reputation of the people (which, however, it was found they did not deserve), and feeling that a people who knew nothing of schools would not endure for any length of time the restraints of a schoolroom, and the cost of building being very great (all lumber and material being sent from San Francisco, 3,000 miles), the schoolhouse was built to hold about 50 pupils, and it was thought that if 50 pupils could be obtained among such a people, under such circumstances, it would be a very great success. But, to the astonishment of the teachers themselves and to the astonishment of the friends of education interested in these Arctic schools, it was found that the total enrollment for the first year was 301 pupils, out of a population of 539 people. The average daily attendance for the last seven months of the school was 146, and the average daily attendance for the whole session of nine months was 105. As the schoolroom would hold only about 50 at a time, the teachers were compelled to divide the pupils into three classes and hold morning, afternoon, and evening sessions of school. And then, to prevent the children who belonged to the afternoon or evening school from smuggling themselves into the morning session, or the morning children from remaining to the afternoon or evening session, it was found necessary to build two parallel snow walls some distance from the schoolroom door, and when the bell stopped ringing for school the teachers ranged themselves on either side, in order to sift the children that were trying to get into the schoolroom. It was with great difficulty that the pupils were made to understand that it was not proper to talk and laugh and jump over the benches in the schoolroom during school as much as they pleased; nor could they understand why 30 or 40 visitors could not lounge about the room which was needed for those who desired to study; so that upon several occasions it became necessary to exclude certain parties from the schoolroom; but exclusion for a few days was all that was necessary. It was considered a great punishment not to be able to come to school. During the epidemic a number of slates that the children had been allowed to take home at night were returned by order of the medicine men, who ascribed much of the sickness to the slates and the pictures which the children made upon them—they were "bad medicine."

The teachers began their school work by learning the Eskimo names of the most important objects in daily use and training their pupils in the English equivalents. From words they proceeded to phrases, and from phrases to sentences, teaching them to translate the Eskimo into English and vice versa. They gradually added English letters and numbers, together with some elementary geography and arithmetic. Although they had had a combined experience of thirteen years in the schoolroom in the States, the teachers declare that they never had more quick-witted, intelligent pupils than these wild Eskimo children. At the beginning of the school year only a few could count ten, in a blundering fashion, and nine-tenths of the pupils knew practically no English whatever. At the close of the first school year they had a good working vocabulary, knew something of geography and map drawing, understood thoroughly the decimal basis of our numbers, could count up to one thousand, work examples in simple addition, write and read simple English words, and carry on a conversation in English on everyday practical matters. The pupils showed a remarkable desire to learn for learning's sake. During 1891–92 the average daily attendance was 106, and during 1892–93, 160.

In the summer of 1893 Mr. W. T. Lopp was appointed superintendent of the reindeer station at Port Clarence, and, with his wife, removed to that place, leaving Mr. and Mrs. H. R. Thornton in charge of the mission. On the 19th of August, 1893, Mr. Thornton was assassinated by two young men whom he had expelled from school for disorderly conduct. The community at once showed their horror at the act by summarily killing both the murderers.

After the death of her husband Mrs. Thornton returned to her parents in Maine, and the mission was closed for the season of 1893–94.

This mission is an important point from which to carry Christian civilization across to the tribes of Siberia, 46 miles distant.

In the narrow strait separating Asia from America is a small group of islands called the Diomede. On these islands are three hundred Innuit.

The largest of the Diomede Islands belongs to Russia and the smaller one to the United States. They are both inhabited, and at this point the inhabitants of Russia and the United States are only separated by a channel 2 miles wide.

The Eskimo of the Diomedes, with those at Cape Prince of Wales, are the great smugglers of the north. Launching their walrus-skin boats (umniak), they boldly cross to and from Siberia, trading the deerskins, sinew, and wooden ware of Alaska for the walrus, ivory, skins of tame reindeer and whale blubber of Siberia, firearms, and whisky.

Nearly midway between Cape Prince of Wales and Point Hope is Kotzebue Sound, around which are a number of villages of the Arctic Eskimo. Some of the hills surrounding this sound rise to the height of a thousand feet, and are covered with a species of wild cotton that in its season gives the appearance of snow.

The Noatak and Kowak rivers, both large streams, and also the Salawick, empty into the sound. This is one of the places where the people come in July from all sections of the country for the purposes of trade and barter. The Innuit of the coast bring their oil, walrus hides, and seal skins; the Tinneh their furs from the interior, and the Chuckchees their reindeer skins, firearms, and whisky from Asia.

On King's Island, south of Cape Prince of Wales, is a village of cave dwellers, numbering 200. This is one of the most remarkable settlements in America. The island is a great mass of basalt rock, about a mile in length, rising from the sea with perpendicular sides from 700 to 1,000 feet above the water. On the south side the wall is broken down by a ravine rising at an angle of 45°, which is filled with loose rock. A great permanent snow bank fills the ravine from the bottom to the top of the mountain. On the west side of the snow is the village of Ouk-ivak, which consists of some 40 dwellings or underground houses, partly excavated in the side of the hill, and built up with stone walls. Across the top of these walls are large poles made from the driftwood that is caught floating around the island. Upon these are placed hides and grass, which are in turn covered with dirt. A low tunnel or dirt-covered hallway, 10 to 15 feet long, leads directly under the center of the dwelling. This is so low that it is necessary to stoop and often creep in entering. At the end of the hall, directly overhead, is a hole about 18 inches in diameter. This is the entrance to the dwelling above.

Frequently in summer these caves become too damp to live in. The people then erect a summer house upon the top of the winter one. The summer house consists of walrus hides stretched over a wooden frame, making a room from 10 to 15 feet square. These summer houses are guyed to rocks with rawhide ropes, to prevent them from being blown off into the sea. The entrance is an oval hole in the walrus hide, about 2 feet above the floor. Outside of the door is a narrow platform about 2 feet wide, leading back to the side of the hill. Some of these platforms are from 15 to 20 feet above the roofs of the huts below them. Across the ravine from the village, at the base of the perpendicular sides of the island, is a cave, into the mouth of which the surf dashes and roars. At the back of the cave is a large bank of perpetual snow. This cave is the storehouse of the whole village. Walrus and seal meat is stored away in rooms excavated in the snow. As the temperature in the cave never rises above the freezing point, meat so stored soon freezes solid and keeps indefinitely.

South of King's Island is that of St. Lawrence, the largest island in Bering Sea. On the extreme northwest corner is the village of Chib-u-Chak, with 21 houses, containing a population of 270, of whom 125 are under 21 years of age. The houses are from 20 to 50 feet in size. For a distance of 5 or 6 feet above the ground the walls are built of driftwood, whalebone, or timbers and planks from shipwrecked vessels. These are placed on end, side by side, forming an inclosure in a circular or oblong form. The cracks between these planks are stuffed with moss. The rafters are covered with walrus and seal skins, forming the roof. Some roofs are in the shape of a cone and others of a dome. The interior is partitioned off around the sides with deerskin curtains, forming sleeping apartments. All around, inside and outside, are filth, dirt, sleds, spears, snowshoes, and household utensils. The houses and tents are located with no reference to order or street lines. The sleds are shod with bone. Of a few small ones the whole runner was made of a walrus tusk.

If the building is a very large one there is a row of supporting poles on each side, midway between the center and sides. Over the rafter poles are stretched walrus hides. These are held in position by rawhide ropes, attached to which and hanging down the sides of the building are the vertebræ of whales, large stones, and old iron from shipwrecked vessels. This anchorage both stretches the skins and prevents them from being blown off. These skins, being translucent, let in a great deal of light. There are no windows in the house, and but a small opening, about 2½ feet above the ground, for a door. Fire, when they have any, is made on the dirt floor in the center of the room. Each building is occupied by several families. Near the house is a scaffold made of posts of the jawbones of the whale. These are 7 to 10 feet high and 10 feet wide. On these are placed the skin boats, harness of the dogs, meat, etc., so as to be out of the reach of dogs. Upon one of these, attached to the whalebone cross-beam, was a child's swing, made of walrus rope.

I saw several excavations where underground houses had once been, and one such house still standing with the roof partially fallen in. The sides were composed of walrus skulls laid up like a stone wall. In this house were some corpses, together with spear, arrowheads, and personal belongings of the dead.

Passing from house to house, I was followed by a crowd of dirty but bright-looking children. From the eldest to the child which was just able to talk they asked for

obacco, which is used by both sexes and all ages down to the nursing child. Five ittle girls, from 4 to 10 years of age, gave a native dance. They commenced with a winging motion of the body from side to side, throwing their weight alternately pon each foot. This was accompanied by an explosive grunt or squeak, as if the air vas being violently expelled from the lungs. As they warmed up they whirled round, writhed and twisted their bodies, and distorted their faces into all manner f shapes and expressions, until they would fall down with dizziness.

In 1891 I erected a good schoolhouse and teacher's residence at the village, but up o the winter of 1893–94 no suitable teacher and his wife have been found for the lace. This building, through the liberality of two ladies, is the property of the 'resbyterian Board of Home Missions, and there is a fair prospect that a teacher vill be sent this season.

In 1878 the island was the scene of a great tragedy. Starvation and pestilence arried away over 400 of the people. When the revenue cutter visited the island in 880, in four villages not a man, woman, or child was left to tell the tale; the corpses of he population alone were found. All the villages on the island, with the single xception of Chib-u Chak, had been swept out of existence.

In 1884 Captain Healy reports, "At the villages along the north shore no sign of iving beings could be found, but the still decaying bodies of the unfortunate Eskimo vere lying in and about the falling houses."

From Bering Strait around the shores of Norton Sound are a number of villages, ggregating a population of 633.

On the northern side of Norton Sound is Golovin Bay. At the Golovin village the wedish Evangelical Mission Union erected a building and established a mission in he summer of 1893. Eighty-five miles east of Golovin Bay, on the east coast of lorton Sound, is the village of Unalaklik. A mission station was established at Jnalaklik in 1886 by the Swedish Evangelical Mission Union, with Rev. Axel E. Carlson in charge.

In 1893 he was assisted by the Rev. August Anderson, the Rev. David Johnson, I. U. Hultburg, Miss Malvena Johnson, and Miss Hannah Swenson. During the ast winter a number of Eskimo were baptized and admitted into the church. They ave a home school with 47 pupils.

Some of the pupils came from distant villages, one family coming 300 miles across ountry from the Arctic region. During the long winter evenings the children are aught various kinds of industrial work, and a number of the boys as well as the irls take lessons in sewing. Invitations have been received by the teachers for the stablishment of branch schools in distant villages.

Forty miles south of Unalaklik is St. Michael, a trading post orignally founded y the Russians in 1835. The place consists of a few log houses, inclosed by a tockade, the property of the Alaska Commercial Company, and a chapel of the Russo-reek Church, with an occasional service by a priest from Ikogmute. This is the oint where the ocean-going steamers transfer freight with the small steamers that ly on the Yukon River. To this point the furs collected at the trading posts of the nterior, some of them 2,000 miles distant, are brought for reshipment to San Francisco. 'his is also the dividing line between the Innuit of the Arctic and the Pacific. Half mile from the trading post is a native village of 30 houses and one dance house or own hall.

On July, 1886, an agreement was entered into between the Commissioner of Educa-ion and the Missionary Society of the Protestant Episcopal Church for the estab-ishment of a school in the great Yukon Valley. Owing to the impossibility of etting the supplies into that inaccessible region, the school was maintained for 886–87 at St. Michael, on the coast, by the Rev. and Mrs. Octavius Parker. In the ummer of 1887 the Rev. John H. Chapman was added to the mission, and the station vas removed to Anvik.

In the summer of 1889 the Rev. Mr. Parker retired from the mission on account of he health of his family. In 1890 Mr. Marcus O. Cherry was commissioned to Anvik, emaining two years.

In the summer of 1891 the Rev. Jules L. Prevost was sent out to take charge of t. James Mission, near the junction of the Yukon and Tanana rivers, which had een previously established by the Rev. and Mrs. T. H. Canham, of the Church of England.

Around the head waters of the Yukon River the Church Missionary Society of London has established three missions on the borders of Alaska, one at Rampart louse, on the Porcupine River; another at Buxton, near the mouth of "Forty Mile Creek," and the third at Harper's Trading Station. The latter is occupied by Rev. nd Mrs. T. H. Canham. Mrs. Canham was the first white woman to cross the Rocky Mountains on snowshoes north of the Arctic circle in midwinter.

Buxton is the headquarters of Bishop Bompas, the mission school being taught by Miss Susan Mellett.

Rampart House was the field of the Rev. G. C. Wallis, who in 1893 returned to England on account of his wife's health.

RUSSO-GREEK MISSION, IKOGMUT, YUKON RIVER.

MORAVIAN MISSION, CARMEL, ALASKA.

In 1886–87 the Roman Catholics entered the Yukon Valley and established missions nd schools at Nulato, Kosoriffsky, and Cape Vancouver.

At Kosoriffsky they have 73 pupils in the home school. Their missions are in charge f four or five priests and nine sisters of the order of St. Ann.

In 1892 they opened a mission in the valley of the Kuskokwim.

South of the Yukon River and running parallel with it are the valleys of the uskokwim and Nushegak rivers, occupied by the Moravian missionaries.

In the spring of 1885 the Rev. and Mrs. W. H. Weinland and the Rev. and Mrs. J. H. ilbuck and Mr. Hans Torgerson were sent to the Kuskokwim River as the first missionaries to the Eskimo of Alaska.

That fall Mr. Torgerson, the carpenter, was accidentally drowned, and Messrs. Veinland and Kilbuck were left alone to erect the mission buildings as best they ould before the Arctic winter set in.

In the winter of 1886–87 Mr. Weinland's health so far failed that he with his family eft the station and in the summer of 1887 returned to California, where he has been loing valuable service among the Mission Indians.

During the winter of 1887–88 the Rev. and Mrs. Kilbuck alone bravely held the ort. In spite of the 30° below zero and perils of storm and hostile shamans, Mr. Kilbuck would walk 25 miles on snowshoes to preach at a neighboring village. It was a long, dark winter, but the dawn was at hand. On Good Friday preaching on the crucifixion and explaining that Christ died on the cross to take away the guilt of sin, some of the older men exclaimed: "*Kou-ja-nah!* [thanks]. We, too, desire to have our badness taken away by that blood."

Mrs. Kilbuck's health becoming impaired under the great hardships which she was heroically enduring, in the summer of 1889 Mrs. Bachman, wife of Bishop Henry T. Bachman, volunteered to give a year at Bethel. She was accompanied by Miss Carrie Detterer, who went out as a permanent laborer. In 1890 the mission force was again increased by the arrival of Miss Lydia Lebeus, and in 1892 by Miss Mary Mack, and in 1893 by Mr. and Mrs. B. Helmich and Miss P. C. King.

In 1893, in addition to the six American missionaries, there were two native helpers and 26 native communicants.

At the native villages of Kikichtagamute and Akaigamute, the Christians, owing to the persecutions of the shamans, are preparing to leave their homes and establish a Christian village.

At Ongavigamute, the uppermost station on the Kuskokwim River, a log mission house, 18 by 20 feet, has been erected. This station is being cared for by the Rev. and Mrs. Weber. Another station has been established at Quinehaha, at the mouth of the Kuskokwim.

In the summer of 1886 the Moravians located and erected a mission station at the mouth of the Nushagak River. The mission was formally opened in the summer of 1887 with the arrival of the Rev. and Mrs. Wolff and Miss Mary Huber.

In 1889 the new station at Carmel was strengthened by the arrival of the Rev. John Herman Schœchert, and in 1890 by Miss Emma Huber.

At Carmel is an industrial home, with 18 pupils, and a church with 17 communicants.

In 1893 a sawmill was erected near Bethel.

A short portage across the Alaska Peninsula brings us to the settlements of the civilized Innuit and Creoles.

In 1784 Gregory Shelikoff formed a settlement on Kadiak Island and commenced the subjugation and civilization of the people. Soon after he organized a school, which was the first in Alaska. The first church building in Alaska was also erected on this island. For a long time it was the Russian capital, the chief seat of their power and operations. A tombstone in the Russian cemetery bears date of 1791. The present village of Kadiak (St. Paul) numbers 323 people. They have a few cattle, and cultivate small gardens. They have a large church and a resident priest; also stores of the Alaska Commercial Company, a deputy collector of customs, and a register of the tides. Kadiak is the headquarters of the Alaska Commercial Company for the district comprising Cooks Inlet and Prince Williams Sound.

The Russian school has been extinct for more than a quarter of a century, and for years the people have been anxiously looking for another.

It was therefore with peculiar pleasure that on the 22d of September, 1886, an experienced teacher was landed with the necessary school books, etc.

Prof. W. E. Roscoe, with his wife and baby, received a warm welcome from the people. He was not in the village twelve hours before a delegation of the citizens waited upon him to know if a night school could not be established for the married people to learn English. A trader 100 miles away, reading in a San Francisco paper that the Government would open a school at Kadiak, sent his wife and two half-grown daughters to attend the school. In their eagerness not to lose a day, they reached Kadiak six months in advance of the teacher.

Opposite Kadiak is Wood Island, with 125 people, of whom 50 are children. In 1893 a large, substantial building was erected on Wood Island by the American Bap-

tist's Woman's Home Mission Society, as a mission for orphans, waifs, and other children of that region.

Professor Roscoe, of Kadiak, writes, under date of September 29, 1890: "In every settlement through this part of the country may be found poor, defenseless children, clothed only in rags, with no one to provide suitable food or clothing, and living entirely on such charity as may be found among a heathen people. There are many destitute children, made so by the drunkenness and the vagabond character of their parents. In addition to a kind of beer which the natives themselves make from sugar and graham flour, they succeed in buying large quantities of whisky from sailors and the more reckless class of traders. The salmon canneries are, generally speaking, a curse to the natives. The Chinese employees bring, or rather smuggle, immense quantities of 'saushu' into the country, and peddle it out to the natives. In the Aleut settlement of Afognak, the natives have sold the bedding from their huts to obtain the vile stuff. The winter is upon them, and until recently they have been so demoralized with liquor that they had not laid in the usual winter's supply of dried fish, their main subsistence. Without money and provisions and clothing, what misery and want will there be in that village this winter, all because of intoxicating liquors.

"White hunters, recently arrived from the westward, tell me it is the same out there. The natives are demoralized by drink. Now, the future of this race is that, practically, they will perish from off the face of the globe unless they are Christianized, and that soon. It is a fact that the children do not generally show this terrible craving for strong drink. The pupils of my school are ashamed of their parents' drinking, and we never see them drink any. It seems, therefore, to be rather an acquired habit than an inherited appetite. It is only right and just that our Government take orphan children and inebriates' children and put them in a good industrial school under religious teachers, who, in addition to moral and intellectual training, will teach them the cultivation of soil, the rearing of cattle, sheep, hogs, and poultry, the elements of some of the mechanical arts; and the girls the art of sewing and cooking."

Just north of Wood Island is Spruce Island, where a Russian monk kept a small school for thirty consecutive years, giving instruction in the rudimental arts and agricultural industries. The monk is dead and the school discontinued.

Near by are the two villages of Afognak, with a population of 321, of whom 146 are children. These cultivate 100 acres in potatoes and turnips. They have a large Greek church.

September 25, 1886, I landed school desks and supplies for a school through the breakers.

In 1890 a comfortable school building and teacher's residence were erected by the Government. In 1891 the teacher reported that while the people were quiet and inoffensive, yet a hundred years of misrule has broken their spirit and left them without hope or courage to better their condition; intemperance is very rife among them, and many of the pupils of the school, during the winter, were on the verge of starvation because their parents had wasted nearly all their living on intoxicating liquors. On visiting his pupils at their homes, he often found both parents dead drunk and the hungry children shivering with cold. Until some efficient means can be employed to prevent the introduction of liquors among them, the school work will be carried on under very great disadvantages.

At Karluk a comfortable teacher's residence and school building have been erected. The chief industry is canning salmon, which gives employment to children as well as adults, so that during the run of the salmon in summer school is suspended. It is an important center for a school, and it is hoped that much can be accomplished in the future.

ALEUTS AND CREOLES.

From the Innuit we pass to the consideration of the Aleuts. The origin of the word "Aleut" is not known. They designate themselves by the term "Unung-un," the native word for "our people."

They occupy the Aleutian chain of islands and portions of the Alaska Peninsula, from the Shumagin Islands, 1,650 miles westward to Attu.

The average height of the men is about 5 feet 6 inches. They have coarse black hair, small eyes, high cheek bones, flat noses, thick lips, large mouths, broad faces, and light yellowish-brown complexions, with a strong resemblance to the Japanese.

The marriage relation is respected, and as a rule each family has its own house, with two to three rooms. They use in their houses a small cast-iron cook stove or neat wrought-iron cooking range, granite-ware kettles, white crockery-ware dishes, pewter or silver-plated ware, and feather beds covered with colored spreads. Their walls are adorned with colored pictures, and their houses lighted with kerosene in glass lamps. Many homes possess an accordion, a hand organ, or music box, some

ENGLISH MISSION, FORT SELKIRK, YUKON RIVER.

of the latter costing as high as $200. They dress in American garments, and their women study with great interest the fashion plates and some try to imitate the latest styles.

The village of Unalaska has a population of 60 white men and 5 white women and 251 Aleuts and Creoles, of whom 132 are children. They have a church, priest's residence, the stores, residences, warehouses, and wharves of the Alaska Commercial Company, 18 frame residences, and 50 barrabaras. It is the most important settlement in western Alaska and the commercial center of all trade now in that region or that shall develop in the future. It is the natural outfitting station for vessels passing between the Pacific and Arctic oceans. In the mountains back of the village is a volcano in eruption.

In September, 1889, Mr. John A. Tuck reached the village and opened a day school. The following season a few girls were taken into his family and a mission home opened under the auspices of the Methodist Woman's Home Mission Society. The Home family has increased until, in 1893, 26 girls enjoyed its advantages.

Two hundred and twenty-two miles north of Unalaska are the celebrated Pribilof, or, as they are more popularly called, Sea Islands.

The village of St. Paul, on an island of the same name, is laid out in regular streets like an American village, and has 64 houses and a priest's residence. The population is 18 white men, 4 white women, and 222 Aleuts.

Twenty-seven miles to the southeast is the companion island of St. George, with 8 white men and 85 Aleuts. They have a church and school. These islands are leased by the United States Government to the North American Commercial Company.

The revenue of these islands since 1870 has returned to the Government the entire sum paid to Russia for the whole country.

From these two islands come nearly all the seal skins of commerce. There is a small school on each island supported at the expense of the company, with 98 per cent of the children in attendance.

In the immediate vicinity of the Unalaska, on the island of Spirkin, is Borka. This village is noted for its cleanliness. With their white-scrubbed and neatly sanded floors, their clear, clean windows, neat bedding, tidy rooms, and abundance of wild-flower bouquets on tables and window sills, they may properly be called the Hollanders of Alaska.

To the eastward, near the southern end of the Alaska Peninsula, is Belkoffski, with a population of 185. In addition to the buildings of the great trading firms, the village has 30 frame houses and 27 barrabaras.

In 1880 they raised among themselves $7,000 for the erection of a church. One-half of them can read and write in the Aleutian language, and they support a small school. West of the village is the magnificent volcano Shilhaldin in active eruption, and to the north Pavloff volcano is throwing out smoke like the smokestack of an ocean steamer.

At Unga, with its 74 children, I established a school October 20, 1886, Prof. John H. Carr (the teacher) and his wife belonging to the Methodist Church.

The Methodist Woman's Home Mission Society have erected a teacher's residence and named it "The Martha Ellen Stevens' Cottage," in memory of Mrs. Carr, who died there.

For the southern coast of Alaska between Sitka and Unalaska there is a monthly mail during the seven summer months of the year. To the north of the Aleutian Islands there is only one mail a year.

In the Aleutian district are 1,890 Aleuts and 479 Creoles.

TINNEH.

"Tinneh" is the native word for "people." The Tinneh of Alaska are tall, well formed, strong, and courageous, with great powers of endurance. They are great hunters and fishers. Polygamy prevails among them, the men frequently having more than one but seldom more than three wives. Wives are taken and discarded at pleasure. Among some of them female infanticide is occasionally practiced. The bodies of the dead are buried in boxes above ground. Shamanism and witchcraft, with all their attendant barbarities, prevail. They also believe in a multitude of spirits, good and bad.

On the lower course of the Yukon and Kuskokwim rivers, and in the great range of country north and south bordering on the Innuit of the coast, are the western Tinneh, the Ingalik of the Russians, numbering in three bands about 1,800.

From the junction of the Yukon and Tanana rivers, westward to the British line, from the Innuit on the Arctic shore almost to the Lynn Canal on the south, is the home of the Kutchin families. They number, with the Ah-tena, on Copper River, about 3,300. Some of these people have been taught to read by the missionaries of the Church Missionary Society of England.

For years the Church Missionary Society of England has had stations at Fort McPherson and La Pierre House, bordering on northeastern Alaska, and their missionaries have made occasional trips on the Upper Yukon and its tributaries.

THLINGET.

The Thlinget, composed of 10 clans, occupy the islands of the Alexander Archipelago and coasts adjacent. They number 5,834.

Immediately associated with these are 788 Hydah, occupying the southern end of Prince of Wales Island.

The Thlinget are a hardy, self-reliant, industrious, self-supporting, well-to-do, warlike, superstitious race, whose very name is a terror to the civilized Aleuts to the west as well as the savage Tinnah to the north of them.

At the base of Mount St. Elias is Yakutat. This is a station of the Swedish Evangelical Union, with Rev. and Mrs. Albin Johnson, Rev. K. J. Hendrickson, and Miss Selma Peterson, teachers. Mrs. Johnson (Agnes Wallin) was from Jankaping, Sweden, and made a journey of 9,000 miles to join Rev. Mr. Johnson, to whom she was married upon her arrival at the mission, on the 18th of May, 1891. A large, substantial boarding house, 35 by 14 feet in size, and two and a half stories high, erected in 1891, was burned in the winter of 1892-93. A new building was at once commenced.

CHILKAT.

Occupying the extreme northern section of Lynn Canal and the valleys of the Chilkat and Chilkoot rivers is the Chilkat tribe, numbering 988. They are great traders, being the "middle men" of their region, carrying the goods of commerce to the interior and exchanging them for furs, which are brought to the coast, and in turn exchanged for more merchandise. Their country is on the highway of the gold seekers to the interior.

In the summer of 1880, a trading post having been established among them, I arranged for a school to be taught by the wife of the trader, Mrs. Sarah Dickinson, native.

The mission proper, however, commenced July 18, 1881, with the arrival of Rev. Eugene S. Willard and family.

In 1882 Miss Bessie M. Mathews, of Monmouth, Ill., was sent out to take charge of a boarding department, which was opened in 1883. The station is called Haines. Thirty miles up the Chilkat River, for a time, a school was taught by Louis and Tillie Paul, both natives.

During 1885–86 Mr. Willard and family returned East to regain their health, injured by exposure and hardships, and the mission was closed. It was reopened again in 1887 by Mr. and Mrs. F. F. White, who remained two years. In 1891 Rev. W. W. Warne and wife were sent to Haines and the work resumed. In 1893 the converts asked to be organized into a church.

HOONAH.

One hundred miles southwest are the Hoonahs, occupying both sides of Cross Sound, and numbering 908. In 1881 I erected a schoolhouse and teachers' residence at their principal village, on Chichagoff Island, and placed Mr. and Mrs. Walter B. Styles, of New York City, in charge. In 1884 Rev. and Mrs. John W. McFarland were sent from Wrangell to Hoonah, and are now in charge of the school.

One of the peculiarities and discouragements of this and several other stations in Alaska is that in summer the people all leave their houses in search of work and provisions. Dr. and Mrs. McFarland partially overcame this difficulty by taking a canoe and following their people to their hunting and fishing camp.

There as elsewhere faithful work bears fruit, and in 1893 Mr. McFarland reported a church of 161 native communicants redeemed from heathenism.

AUKE.

A few miles to the eastward, on Admiralty Island, are the Aukes, numbering 640. In that region valuable gold mines have been opened and an American mining village established in Juneau. A summer school was taught by Mrs. W. H. R. Corlies during 1882 and 1883.

In the spring of 1886 the Board of Home Missions of the Presbyterian Church commissioned Rev. Joseph P. White missionary to the whites at Juneau, and Rev. E. S. Willard to the natives.

During that season Mr. Willard took down the mission premises at Tsèk-nûk-Säuk'-y, removed them to Juneau, and from the materials erected a neat church for the natives.

A small house (which has since been replaced by a commodious building) was erected adjacent to the church for a mission home for native children. Assisted by

THLINGET HOUSE—INTERIOR.

SCHOOLHOUSE, FORT WRANGEL, ALASKA.

llard, Mrs. Elizabeth Matthews, and Miss Margaret Dunbar, Mr. Willard has a church of 52 native communicants (1893) and a flourishing mission home, ich a number have been sent to the training school at Sitka.

TAKU.

miles to the south, on the mainland, is the Taku tribe, numbering 269. A school was held among them in 1880 by Rev. and Mrs. W. H. R. Corlies, of phia. In 1882, pressed by the importunities of the leading men of the tribe, up his abode among them, and erected school and residence buildings at k-Säuk'-y.
4 circumstances required their return to Philadelphia, the people in the e having removed to Juneau. In 1886 the mission buildings were taken Mr. Willard.

HOOCHINOO.

southwestern side of Admiralty Island are the Hoochinoo, numbering 666. village is at Killisnoo, where the Northwest Trading Company has estab- large fish-oil manufactory. In the neighborhood are extensive coal fields able gold mines. I established a public school in this place in January, 1886. Rev. L. F. Jones and wife were placed in charge of the school, and in 1894 s a call for a church organization.

KAKE.

south, on Kuiu and Kupreanoff Islands, are the Kake, numbering 568. In er of 1892–93 a school was opened for the Kakes, with Charles H. Edwards . A few months afterwards, Mr. Edwards being shot by whisky smugglers, ol was closed and has not yet been resumed.

STIKINE.

ard, around the mouth and lower course of the Stikine River, are the They number 317. Their principal village is at Fort Wrangell, on an the same name.
fall of 1877 I opened for the Presbyterian Board of Home Missions a mission ith Mrs. A. R. McFarland in charge. In 1878 Rev. S. Hale Young, of West , was sent out. The same season a boarding department for girls was estab- y Mrs. A. R. McFarland. In 1879 Miss Maggie A. Dunbar, of Steubenville, s added to the teaching force. The same year the erection of a suitable was commenced, which was finished and occupied the following year; also year Rev. W. H. R. Corlies and family arrived from Philadelphia. Mrs. pened a school on the beach for visiting natives, and her husband a night r adults. He also served as missionary physician to the place until his to the Taku.
Rev. John W. McFarland and Miss Kate A. Rankin were added to the mis- orce. In the fall of 1884 the Girls' Home was removed to Sitka, together s. A. R. McFarland and Miss Rankin. Mr. J. W. McFarland and his wife bar) were given chargé of the mission at Hoonah.
the Rev. S. Hale Young was succeeded by Rev. Allan McKay, and in 1892 n was followed by Rev. Clarence Thwing. Under the labors of Rev. and ving the old church is regaining its former prosperity.

METLAKAHTLA.

spring of 1887 the Tesimpeans, who had been civilized and Christianized by iam Duncan at Metlakahtla, British Columbia, becoming alarmed at the ments of the Colonial Government and the arbitrary measures of the Church nd, gave up their comfortable homes, abandoned their improvements and that they could not carry with them, and empty-handed went out into the a wilderness for conscience sake. Crossing the international boundary line ka, they settled upon Annette Island, 60 miles north of their former home. 7th of August Mr. William Duncan arrived, and amid general rejoicing and of guns the "Stars and Stripes" were floated over this people, that thus transferred their allegiance from Canada to the United States.
the first season the heavy forest was felled and over a hundred log houses cted for a temporary shelter of the inhabitants.
gh the pecuniary assistance of friends in New York, Boston, Portland, and e, a sawmill, salmon cannery, and other industries have been established, , schoolhouses, and other public buildings erected, and the old log dwell- rapidly being replaced by comfortable painted frame dwellings.
nsus of 1890 gives this model village a population of 828.

TONGASS.

Two hundred miles south of Fort Wrangell are the Tongass, numbering 273. Some of these cross over to British Columbia, and find school privileges at Port Simpson, a station of the Wesleyan Methodist Church of Canada. In 1884 a school was established among them, with Louis and Tillie Paul as teachers.

In December, 1886, Prof. S. A. Saxman was placed in charge of the public school. Mr. Saxman and Mr. Paul being drowned a few months after, the school and mission were discontinued.

HYDAH.

West of the Tongass, on the southern half of the Prince of Wales Island, are the Hydah, numbering 788. They are a large, well-formed, and handsome race, with light complexion, and have long been noted for their bravery and ferocity in war. Terrorizing all the neighboring tribes, they were known as the "Bulldogs" of the North Pacific. Years ago they did not hesitate to attack and plunder English and American vessels. In 1854 they held the captain and crew of an American vessel in captivity until ransomed by the Hudson Bay Fur Company. Their villages are remarkable for the number of totem sticks. These are carved logs from 1 to 2 feet in diameter and from 20 to 60 feet high. Some of them contain hollow cavities, in which are placed the ashes of cremated dead chiefs; others are heraldic, and represent the family totem or orders. In some cases a large oval opening through one of these sticks forms the entrance to the house; in others the pole is at one side of the entrance. The house is a large, low, plank building, from 40 to 50 feet square, with a fireplace in the center of the floor, and a large opening in the roof for the escape of the smoke. Some have inserted windows and doors in their buildings, and procured bedsteads, tables, stoves, dishes, and other appliances of civilized life.

Their food consists largely of fish, dried or fresh, according to the season. Wild berries and deer are plentiful. The berries are preserved in fish oil for winter use. Their coast also abounds with good clams. They raise large quantities of potatoes.

The Hydah are noted for their skill in carving wood, bone, gold, silver, and stone. The finest of the great cedar canoes of the Northwest Coast are manufactured by them. They practice polygamy and hold slaves. The husband buys his wife, frequently while a mere girl, from her parents. If she does not suit, she can be returned and the price refunded. They are inveterate gamblers.

On the 22d of August, 1881, a mission was established among them, in connection with the Presbyterian Board of Home Missions, at the village of Howkan, with Mr. James E. Chapman in charge as a teacher. The station was called Jackson by the missionaries. In the spring of 1882 Rev. J. Loomis Gould and family, of West Virginia, were sent to the Hydah. The same year some ladies in Brooklyn, N. Y., provided a sawmill for the station; and in the fall of that year Miss Clara A. Gould was added to the teaching force.

In September, 1885, the mission day school was changed into a public school, Miss Gould continuing the teacher. In 1886 Mrs. A. R. McFarland removed from Sitka and established a home for girls, with Miss C. Baker as assistant. Mr. Gould has gathered around him a native church of 54 communicants.

HANEGAH.

In the northern portion of Prince of Wales Island are the Hanegah, numbering 587. Their winter village is Tuxikan. In summer they congregate at the salmon cannery and sawmill at Klawack.

In November, 1889, I left at Tuxikan Rev. L. W. Currie, of Texas, to establish a public school. Mr. Currie was a minister of the Southern Presbyterian Church, with a large experience among the Indians of the Indian Territory and of Texas. As no white man had ever lived in their village, there was no comfortable house to be had, and the mission family were compelled to go into a native house.

It was a large building, 80 by 37 feet in size, with plank sides and a rotten bark roof. On the inside of the building a raised platform about 8 feet wide extended around the four sides of the room. Inclosed by this platform and 3 feet below it was the main floor, forming a pit 21 by 22 feet in size. In the center of the pit a space 8 feet square was left unfloored and covered with gravel. This was the fireplace. The smoke, circling around the room, passed out of a hole 6 feet square, which was left in the roof for that purpose. The hole that permitted the escape of the smoke allowed the free descent of the rain. The south side of the house extended on piles over the tide. Into this building, which an eastern farmer would consider unfit for his cattle, a choice Christian family moved without a murmur. A partition of sheeting was erected along the edge of the platform, forming a partition between them and the pit. The pit was set apart for the school and church rooms, and the platforms on two sides divided into rooms for the teacher's family. On the other two platforms lived the native who owned the house. He had a family of six.

In 1887 Mr. Currie removed to Klawack, and erected a school and residence building. Dying in 1887, his wife returned to Texas.

For a couple of years the mission was continued by Mr. H. C. Wilson, a layman, but in 1893 is unsupplied.

SITKAS.

To the north, on the western coast of Baranof, are the Sitkas, numbering 721. Their chief village is at Sitka, the old capital of the Russian possessions in America. It was their political, commercial, religious, and educational center. As early as 1805 a school was opened at Sitka. It held a very precarious existence, however, until 1820, when it came under the charge of a naval officer, who kept a good school for thirteen years. In 1833 this school came under the direction of Etolin, who still further increased its efficiency. Etolin was a Creole, who by force of ability and merit raised himself to the highest position in the country, that of chief director of the fur company and governor of the colony. He was a Lutheran, the patron of schools and churches. While governor, he erected a Protestant church at Sitka, and presented it with a small pipe organ, which is still in use.

In 1840, besides the colonial school at Sitka, was one for orphan boys and sons of workmen and subaltern employees of the fur company, in which were taught reading, writing, arithmetic, grammar, mechanical trades, and religion.

In 1839 a girls' school of a similar character was established, and the number of boarders limited to forty.

In 1841 a theological school was established at Sitka, which in 1849 was advanced to the grade of a seminary.

This made five schools at Sitka—two for the children of the lower class, two for the higher class, and one seminary.

About the time of the transfer of the country the teachers were recalled to Russia and the schools suspended.

But with the change of government came a new people. The majority of the Russians left the country, and their places were taken by Americans. Many came in from California, and on the 8th of November, 1867, less than a month from the time that the country passed under the United States flag, the citizens called a meeting and formed a temporary local government, and on the 18th of December, 1867, a petition formed by forty-nine persons, two of whom "made their mark," was presented to the common council, asking that a citizens' meeting might be called to empower the council to establish a school. On the 20th of March, 1868, the council adopted some school regulations and appointed three trustees, who exercised a joint control with a committee of officers from the military post at Sitka. During the winter of 1868–69 a school building was purchased. The annual reports of the trustees have disappeared, and there is nothing to show the time when teaching commenced. In October, 1869, the council voted that the salary of the teacher should be $75 per month in coin, and on March 1, 1871, it was ordered to be $25 per month, which evidently means that at the latter period the post commander withdrew the $50 per month which had been paid from the army funds. On the 12th of August, 1871, permission was given the bishop of the Greek Church to teach the Russian language one hour each day in the public school. During 1873 the school seems to have died out.

In 1879 and 1880 an attempt was made to establish a school for Russian children, which was taught by Mr. Alonzo E. Austin and Miss Etta Austin.

In the winter of 1877 and 1878 Rev. John G. Brady was appointed to Sitka, and in April, 1878, a school was opened by Mr. Brady and Miss Fanny E. Kellogg. In December, through a combination of circumstances, it was discontinued. In the spring of 1880 Miss Olinda Austin was sent out from New York City and commenced school April 5 in one of the guardhouses with 103 children present. This number increased to 130. Then some of the parents applied for admission, but could not be received, as the room would not accommodate any more.

In November some of the boys applied to the teacher for permission to live in the schoolhouse. At home, they alleged, there was so much drinking, talking, and carousing that they could not study. The teacher replied that she had no accommodations, bedding, or food for them. But they were so much in earnest that they said they would provide for themselves. Upon receiving permission, seven native boys, 13 and 14 years of age, bringing a blanket each, voluntarily left their homes and took up their abode in a vacant room of one of the Government buildings. Thus commenced the boarding department of the Sitka school. Soon other boys joined them. Capt. Henry Glass, who succeeded Captain Beardslee in the command of the U. S. S. *Jamestown*, from the first, with his officers, especially Lieut. F. M. Symonds, U. S. N., took a deep interest in the school. As he had opportunity, he secured boys from distant tribes and placed them in the institution, until there were 27 boys in the boarding department.

In the winter of 1882 the schoolhouse was burned, and the boys took refuge in an abandoned Government stable, which was fitted up for them. In the fall of 1882,

after consultation with the collector of customs, the commander of the United States man-of-war, and the leading citizens, I selected a new location for the school, outside of village limits, and erected a two-and-a-half-story building, 100 by 50 feet in size.

This location was donated to the Board of Home Missions by the Rev. John G. Brady.

In the spring of 1884 the faithful labors of Rev. Alonzo E. Austin and teachers bore fruit. The Holy Spirit was poured out and nearly all the adult pupils were brought to Christ. The work extended to the native village, and many of the parents accepted Jesus as a personal Savior.

On the 12th of August, 1884, I took charge of the mission and school, and, in connection with Mr. Austin, on the 7th of September organized a church of 44 native and 5 white communicants. The church attendance has since grown to over 341 members.

On September 14 to 16 the Presbytery of Alaska organized at Sitka and held its first meeting. During the same month Mrs. A. R. McFarland and her Home for Girls were removed from Fort Wrangell to Sitka, and the united schools made a Government contract industrial and training school.

To meet the growth of the school a second large building, 130 by 50 feet in size and two and one-half stories high, was erected, and so far finished that it was occupied January 1, 1885.

In the spring of 1885, on my being appointed United States general agent of education in Alaska, Prof. A. J. Davis, of Pennsylvania, was appointed superintendent of the school. Family matters requiring his return east, he was succeeded by Mr. William A. Kelly, of Pennsylvania.

As the school grew, the steam laundry, boys' and girls' hospital wards, two industrial buildings, church, library, and museum, eight model cottages, and other buildings were erected.

In 1890 Professor Kelly reported concerning the 164 pupils in the school:

"Our school is distinctively coeducational. The boys and girls recite in the same classes, dine together in the same dining room, and, under wholesome restraint, have opportunities for social intercourse.

"A few years of sedulous training have developed in some of our oldest pupils a spirit of emulation, a sense of personal responsibility, self-respect, self-reliance, and self-helpfulness, which command respect. Most of our large boys, advanced far enough to read intelligently in the second reader, are learning a trade (all being in school half of each day and at work half a day), and the diligence with which they pursue their studies, the zest with which they enter upon industrial work day after day, is most praiseworthy of them and encouraging to their instructors.

"All of the shoes for the pupils of our school are handmade in our shop, under the direction of a competent foreman. Considerable custom work is also done.

"Our supply of barrels and half barrels far exceeds the demand, yet we consider coopering an excellent trade for our young men. Owing to high freight, barrels are usually made at the fishing station, where needed, and coopers are in demand at those places.

"We are always pressed with work in carpentry. The variety and scope of work have proved a most valuable source of instruction to the boys, most of whom are aptly adapted to mechanical industry. The boys have made commendable progress. Young men who can do carpenter work fairly well can find opportunity to ply their trade in any of the villages of Alaska.

"We have eight model cottages, six of which are occupied by young married couples from the school. These young folks have been thrown entirely upon their own responsibility and resources, and they are doing well in earning a livelihood, while their houses are kept clean, neat, and homelike. The environments of family life among the young folk, in contradistinction to that in vogue among the natives, tend to create new conditions and inspire new impulses among their own people.

"The girls are trained in every department of household industry, kitchen, dining room, teachers' room, etc. The matron and her assistants give each girl individual care in the details of housekeeping, thus gradually inculcating and developing a sense of personal responsibility.

"Our boys do the bread baking for the school, while the girls in turn are taught how to bake and cook for a family. They are also trained to wait upon the table, and they serve the teachers and guests with grace and manners. Our young boys are also trained in our school, kitchen, and dining room.

"Our pupils, from the children to the adults, sing with a spirit and understanding that outrivals many of the public schools.

"Our brass band of 20 members dispenses music for the school and for the town on public occasions.

"We have a military company of 35 members. The guns were kindly loaned us by the governor of the Territory.

BERRY MARKET, SITKA.

MISSION WATERWHEEL, SITKA

"Lessons in patriotism are constantly inculcated. The Alaskans are a loyal, patriotic people. Rev. A. E. Austin, the veteran missionary of the school, has charge of the religious and devotional exercises."

In 1891 Mr. Kelly resigning in order to secure needed rest, he was succeeded by Mr. Alfred Docking, and he a few months later by Rev. A. E. Austin, who, in his long service at Sitka, has built up a native church of 341 communicants.

The mission force in 1893 consisted of Rev. A. E. Austin, Mr. R. A. Clark, Mrs. A. E. Austin, Mrs. M. C. Wade, Miss A. R. Kelsey, Mrs. M. D. Clark, Miss F. H. Willard (native), Mrs. A. T. Simpson, Mrs. T. K. Paul (native), Mr. J. A. Shields, Mr. A. T. Simpson, Mr. J. E. Gamble, and Mr. W. Wells (native).

In addition to the training school, the Greek and Papal churches each have a school, and the Government two schools, at Sitka.

But of all the schools at Sitka, the Presbyterian Training School is the "City of Refuge" for those fleeing from death—the "House of Hope" to those sitting in the habitations of cruelty—the "House of Help" to the starving, homeless, friendless waif—an asylum to the escaped slave—the protector of helpless girlhood.

A few years ago a little girl was accused of witchcraft. The tribe bound her with a rope. A stalwart chief, holding one end of the rope, walked in advance dragging the child after him, while another came behind holding the other end of the rope. These men were the admiration of the tribe for their bravery in holding between them a puny, starved girl of 10. She was rescued by Professor Austin, who was in charge of the school, and given a home.

A girl of 14, when about to be sold into a life of sin, for the benefit of a distant relative, escaped from her grandmother, who was guarding her, and found a refuge in the school.

Another, a girl of about 17, was being sold for similar purposes by her stepmother and aunt. The two women, quarreling over the division of the money, came to settle the dispute before the clerk of the court, who took the girl from her unnatural protectors and placed her in the school.

Another was the slave of a prominent chief. After his death his two widows treated her so cruelly that she ran away, and was found hidden under a house. She was taken into the school and furnished protection and a home. A man that married one of the widows claimed her as his property, and tried to get possession of her, but in vain. The school was her protector.

Another, to prevent being married to her stepfather and becoming a plural wife with her own mother, ran away and came to the school. For a long time she did not dare visit her mother, and when at length she ventured to visit home they locked her up in a room to keep her. After some days she again escaped and returned to the school for shelter.

Another girl of 15, and her sister, 10 years of age, were picked up on the beach at a mining camp. They were without friends or home, almost without clothing, and in a starving condition. Through neglect and cruel treatment the younger one was almost blind. These orphan sisters were taken into the school, fed, clothed, and kindly cared for. Medical attendance was provided, and the blind one restored to sight.

Among the boys, one had been sold as a slave twice before he was brought to the school. Another had been shot as a slave and a bullet sent crushing through his shoulder. Another had been tied up as a witch and kept four days without food, when he was rescued. Another, when born, was about to be killed by his parents to save the trouble of taking care of him. A neighboring woman took pity on the baby and removed him to her own house. When the school commenced he was placed in it. Many others have come under the protection of the school through trials and dangers.

And all along the coast, if a child is to be sold into slavery, or is in danger of being tortured to death as a witch, or forced into a life of sin, they know that if they can escape and reach the Presbyterian Mission School at Sitka they are safe.

Thus, at points hundreds of miles apart, a few central stations have been established.

While communication is made with the outside world by means of steamer twice a month at some of the more important stations in southeastern Alaska, the stations in arctic and central Alaska are cut off almost entirely from the great, busy, outside world. Once a year the curtain lifts, and they receive their supplies of provisions, clothes, letters, papers, etc., and then it shuts down and they are closed in for another twelve months.

Inasmuch as Dr. Jackson is required to make a voyage each year to northwestern Alaska while the reindeer experiment is in progress, and for that reason can not perform his duties in southeast Alaska, I resolved to place the schools of the Sitka district under the immediate charge of Mr. William Hamilton, the assistant agent, who had hitherto been stationed continuously at the bureau of education. In November Mr. Hamilton proceeded to southeast Alaska and spent a month in that

region, making himself fully acquainted with the school situation, consulting with Mr. W. A. Kelly, the local superintendent, and with the local committees, and inspecting the schools at Sitka, Juneau, Douglas, Killisnoo, and Wrangell, the only places that could be reached at that season of the year.

Section 14 of "An act to repeal timber-culture laws and for other purposes," approved March 3, 1891, reserves from sale "any lands belonging to the United States which shall be occupied by the United States for public purposes, or which shall be reserved for such purposes."

During the past year a number of incorporated companies, engaged in trading, fishing, and lumbering in Alaska, have availed themselves of the provisions of the same act, whereby they can make application for a survey and patent to 160 acres of land upon which their improvements are situated.

As some of these applications cover the site of existing villages where the Government has school buildings, it is important that the land necessary for these school buildings and playgrounds should be marked and reserved at once. Therefore, I would respectfully suggest that the Hon. James Sheakley, governor, the Hon. Warren Truitt, judge of the United States district court, and Hon. William A. Kelly, United States commissioner at Wrangell, be appointed a special commission to visit the more important settlements of southern Alaska, select and mark sites for public school buildings, and report the same to the Secretary of the Interior, that they may be reserved for such purposes by executive order.

I can not urge too strongly the need of an increased appropriation for education in Alaska. For three years in succession the amount granted by Congress for this purpose was $50,000. For the fiscal year 1892-93 this amount was reduced to $40,000. It was only by strict economy that the expenses of the school system had been kept within the limits of the appropriation of $50,000, and the consequence of this reduction was the suspension of three Government schools (Klawack, Kake, and Karluk), the reduction of the salaries of some of the teachers and of the amounts paid to the contract or mission schools. The appropriation for the fiscal year 1893-94 is only $30,000. With this amount it will of course be impossible to reopen the suspended schools, and many very urgently needed repairs to the school buildings must be postponed. It will also be necessary to make sweeping reductions in the amounts granted to the contract or mission schools, which for the past three years have been doing excellent work in civilizing the natives of western and arctic Alaska.

New schools are urgently needed in at least six places (Kotzebue Sound, Nuklukayet, St. Lawrence Island, Kenai, Nutchek, and Tongas), having more than 600 children with no school privileges.

For the present year I had submitted an estimate of $50,000. Without sufficient means it will be impossible to keep the present schools in efficient operation, much less to promote a gradual and healthy growth of the educational system, so essential to the utilization of that vast portion of our country.

TABLE 1.—*Highest enrollment, 1885-1893.*

Public schools.	Enrollment.								Teachers in the public schools, 1892-93.
	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	
Afognak	(*)	35	24	55	38	37	35	40	E. S. Smith
Douglas City, No. 1.	(†)	(†)	67	94	50	23	25	13	E. O. Smith.
Douglas City, No. 2.	(†)	(†)	(†)	(†)	92	68	24	108	J. E. Connett.
Fort Wrangell.	70	106	106	90	83	93	49	49	Miss E. Tolman.
Haines	84	43	144	128	(†)	(†)	(†)	54	W. W. Warne.
Jackson	87	123	110	105	87	100	100	82	Mrs. C. G. McLeod.
Juneau, No. 1.	90	236	25	36	31	33	26	28	D. Davies.
Juneau, No. 2.	(†)	(†)	67	58	51	51	75	61	Mrs. M. A. Saxman.
Kadiak	(*)	59	81	68	67	80	69	74	C. C. Solter.
Karluk	(†)	(†)	(†)	(†)	(†)	33	29	(†)	
Killisnoo	(*)	125	44	90	32	68	33	137	L. F. Jones.
Klawack	(*)	184	81	75	68	50	38	(†)	
Sitka, No. 1	43	60	60	67	58	51	59	50	Miss C. Patton. Mrs. G. Knapp.
Sitka, No. 2	77	138	60	51	83	55	54	48	Mrs. L. Vanderbilt.
Unga	(†)	35	26	(†)	24	(†)	33	35	O. R. McKinney.
Chilkat	(†)	(†)	(†)	(†)	(†)	(†)	89	(†)	
Kake	(†)	(†	(†)	(†)	(†)	(†)	60	(†)	
Port Clarence.	(†)	(†)	(†)	(†)	(†)	(†)	(†)	20	M. W. Bruce.

* Enrollment not known. † No school.

TABLE 2.—*Amounts contributed by the churches and Government to the contract schools.*

Contract schools.	Expended by Government.						Expended by societies, 1891-92.*	
	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.		
Anvik	$500	$1,000	$1,000	$1,000	$1,000	$1,000	Episcopal	$1,187.61
Point Hope	(†)	(†)	1,000	2,000	2,000	2,000		
Metlakahtla	(†)	2,500	3,000	3,000	2,500	2,000	Independent	5,009.00
Bethel	500	1,000	1,000	1,000	1,000	1,000	Moravian	6,613.37
Carmel	300	1,000	1,000	1,000	1,000	1,000		
Hoonah	(†)	(†)	(†)	200	2,000	8,000	Presbyterian	31,724.65
Sitka Industrial School	(†)	12,500	18,000	15,000	11,000	2,000		
Point Barrow	(†)	(†)	1,000	2,000	2,000		Methodist	1,953.33
Unalaska	(†)	(†)	1,200	2,000	2,000	.....		
Nulato	(†)	(†)	1,500	3,050	1,000	1,000	Catholic	10,300.00
Kosoriffsky	(†)	(†)	1,500		1,000	1,000		
Cape Vancouver	(†)	(†)	(†)	(†)	1,000	1,000		
Cape Prince of Wales	(†)	(†)	1,000	2,000	2,000	2,000	Congregational	4,107.65
Unalaklik	(†)	(†)	(†)	(†)	1,000	1,000	Swedish Evangelical	7,325.00
Yakutat								

* Amounts expended by missionary associations, in addition to subsidies received from the Government.
†No school or no subsidy.

Appropriations for education in Alaska.

First grant to establish schools, 1884	$25,000
Annual grants, school year—	
1886-87	15,000
1887-88	25,000
1888-89	40,000
1889-90	50,000
1890-91	50,000
1891-92	50,000
1892-93	40,000
1893-94	30,000

Personnel, salaries, etc.

General agent of education for Alaska, Dr. Sheldon Jackson, Alaska	$1,200
Assistant agent of education for Alaska, William Hamilton, Pennsylvania	1,200
Superintendent of schools for the southeastern district, William A. Kelly, Alaska	480

Advisory board.

Hon. Lyman E. Knapp, governor of Alaska, Vermont	$200
Hon. Warren Truitt, United States district judge, Oregon	200

Local school committees (without salary).

Sitka:
Edward de Groff.
N. K. Peckinpaugh.
John G. Brady.

Juneau:
Karl Koehler.
John G. Heid.
Eugene S. Willard.

Douglas:
P. H. Fox.
G. E. Shotter.
S. R. Moon.

Wrangell:
Thomas A. Willson.
Rufus Sylvester.
W. G. Thomas.

Jackson:
J. W. Young.
W. D. McLeod.
G. Loomis Gould.

Metlakahtla:
W. Duncan.
D. J. Leask.

Kadiak:
N. Kashevaroff.
F. Sargent.

Unga:
N. Guttridge.
M. Dowd.

Unalaska:
N. S. Resoff.
N. B. Anthony.

Teachers of public schools.

Name.	State.	School.	Salary.
M. W. Bruce	Nebraska	Port Clarence	$1,200
J. E. Connett	Illinois	Douglas, No. 2	720
D. Davies	Washington	Juneau, No. 1	900
L. F. Jones	New Jersey	Killisnoo	900
Mrs. G. Knapp	Pennsylvania	Sitka, No. 1	540
O. R. McKinney	do	Unga	900
Mrs. C. G. McLeod	West Virginia	Jackson	720
Miss C. Patton	Pennsylvania	Sitka, No. 1	720
Mrs. M. A. Saxman	Alaska	Juneau, No. 2	720
E. O. Smith	New York	Douglas, No. 1	720
E. S. Smith	Ohio	Afognak	900
C. C. Solter	Washington	Kadiak	900
Miss E. Tolman	Oregon	Wrangell	720
Mrs. L. Vanderbilt	do	Sitka, No. 2	720
W. W. Warne	New Jersey	Haines	900

Miscellaneous expenses.

Supplies (books, stationery, apparatus)	$822.49
Fuel	1,080.10
Furniture	576.95
Light	59.65
Repairs	741.90
Incidentals	93.50
Schoolhouse, Port Clarence	1,000.00

Traveling expenses.

General agent	$417.35
Assistant agent	337.00
District superintendent	107.00
Two teachers to arctic Alaska	400.00

I remain, with great respect,

SHELDON JACKSON, *General Agent.*

Hon. W. T. HARRIS,
Commissioner of Education.

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